

EDITORIAL

This special issue of the journal *Československá psychologie* (Czechoslovak psychology), published on the occasion of the European Congress of Psychology in 2007 in Prague, presents the selected results of research done both in the Czech Republic and the Slovak Republic.

The journal *Československá psychologie* publishes predominantly the original papers from the fields of psychological theory, methodology, research and practice. It represents a unique platform for publishing results of theoretical, experimental, and empirical research that is carried out in the Czech and Slovak research institutes, departments of psychology, and psychological laboratories in the Czech Republic and the Slovak Republic. The papers are presented in Czech and Slovak languages with English abstracts. This special congress issue of the journal is published in English.

The first issue of the journal *Československá psychologie* appeared in 1957, 50 years ago. The founder and the first editor in chief was Jan Doležal (1902-1965). The first editor in chief, after the change of Czechoslovakia to democracy in 1989, was Miluše Sedláková (1936-2003) who impressed the new face of the journal. The present editor in chief is Jiří Hoskovec. After the splitting of the common Czechoslovak state in 1993 the journal remains the common scientific forum for psychologists of both the countries.

The journal *Československá psychologie* is the only psychological journal with impact factor published in the Czech Republic. The impact factor of *Československá psychologie*: 1994 – 0.151, 1999 – 0.196, 2000 – 0.295, 2001 – 0.195, 2002 – 0.190, 2003 – 0.232, 2004 – 0.209, 2005 – 0.241.

Another psychological journal in Czech – the journal *Psychologie v ekonomické praxi* (Psychology in Economical Practice) is emphasising the issues and problems of applied psychology, and is published by the Department of psychology of the Faculty of Arts of the Charles University in Prague. In the Slovak Republic, the journal *Studia psychologica* (with impact factor) has been published in English since 1958. The other Slovak psychological journal *Psychológia a patopsychológia dieťaťa* (Psychology and Pathopsychology of Child) is published in Slovak since 1966.

The mission of the journal *Československá psychologie* cannot be seen only in making the psychological public acquainted with the outputs of psychological research executed and implemented in the Czech Republic and the Slovak Republic, but also in elaboration of the syntheses of knowledge, views, and methodological approaches subject to different paradigms that are applied in solving the psychological problems in particular laboratories of both theoretical and applied psychologies abroad. In this way, the journal fulfils also the informative and educational functions, and participates in the dissemination of knowledge and cultivation of expertness and skill of psychologists working as well as in research and education institutions, and in various areas of psychological practice.

The continuous enrichment of psychological terminology that takes place in the process of particular forms of research in the world psychology and the fact that the journal is published in Czech and Slovak languages leads to the necessity to search for and to create the equivalents of these terms in national languages. The consequence of this is the fact that the journal stimulates the formation of scientific psychological language.

Last but not least, in the rubric „From the history“ the readers can become acquainted with the development of psychological thinking and knowledge, and also with the development of psychology and its most important representatives.

The perspectives of the journal *Československá psychologie* are connected with developmental and educational psychology, psychology of personality, psychosocial basis of health of population, and psychology in the social cultural context.

Since English has become the leading language of communication in psychology, non-English speaking psychologists in Europe and elsewhere should improve their skills at writing articles in English. What matters is quality and originality of the contributions, not the national, geographical, and cultural background of the contributors. But at the same time we must be aware of the fact that development of psychology is the responsibility of psychologists in each respective country, because the relevant problems of local importance must be solved from inside in national languages.

*Jiří Hoskovec, Editor in chief
Daniel Heller, Iva Šolcová, Executive Editors*

Czech science suffered great privation in the past. During the period here of so-called „real socialism“, especially after the pivotal years of 1948 and 1968, many great scientists left the country and those who stayed had to work in forced isolation from science in the rest of the world. In the field of the natural sciences, the situation was bad but not catastrophic. In the social sciences, however, political pressure virtually barred any free exchange of ideas with scientists from abroad. To a large extent this was also the case with psychology.

After the political changes here in 1989, the natural sciences were quickly integrated into world science. However, the social and political sciences had to „plough new ground.“ Fortunately, people within academia managed to create new opportunities for the younger generation. International cooperation was inaugurated and today the situation within the social sciences has stabilised.

I am pleased that Czech Republic has the honour to host the Xth European Congress of Psychology. I very much hope that this event will further accelerate the cooperation of Czech psychologists with colleagues from other European countries. And I would like to wish all of you a pleasant stay in Prague. Prague is a city with an interesting, even fascinating history, but it also has an extensive and important scientific history. In addition, Prague offers many cultural events. So, do enjoy your stay.

With all good wishes for a very successful Congress,

Václav Pačes
President of the Academy of Sciences of the Czech Republic

The aim of this Special issue of Czechoslovak Psychology, which is published in commemoration of the Xth European Congress of Psychology in Prague (X.ECP), is to introduce some of the Czech and Slovak research to the 3000 colleagues, not only from Europe, but from more than 65 countries in the world.

During the past 17 years, Czech and Slovak psychology has gone through many changes, which fulfilled two implicit goals, the most important after the fall of Communism. The goals were to establish again contacts and cooperation with foreign colleagues, to step out of isolation, and at the same time, to raise the professional activity up to the level of European standards. The fact that the European Federation of Psychologists Associations (EFPA) enabled us to organize the Xth Congress in the Czech Republic is an expression of trust, which we have gained. With this event, the Czech psychological community has the opportunity to realize that it belongs to a larger fellowship, which it can also help to co-create.

The Congress is created to map the knowledge, which can be useful for a person in different stages of his/her life. It opens space for theoretical reflection, practical application and also visions, which are necessary intellectual motivations and the source of inspiration. During this mapping of knowledge we also encounter places, which are unexplored. Thus the participants of the Congress can visit these white places. Part of the Xth Congress are traditional forms of presentations, but it has also been innovative with new forms, such as the use of video in diagnostics, intervention and education. A significant contribution of the Czech psychologists is also the establishment of the Comenius Young European Psychologist Award, which will be under auspices of EFPA, and awarded regularly.

With this special issue of Czechoslovak Psychology we would like not only to contribute to the celebration of 80 years since the establishment of Czech-Moravian Psychological Society, but also to the 25th anniversary since the founding of EFPA.

Ivo Čermák, chairman of Scientific committee of Xth ECP
Miloslav Šolc, co-president and chairman of Organizing committee of Xth ECP

CZECHOSLOVAKIA 'S EARLY PSYCHOTECHNICS INTERNATIONALLY¹⁾

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INTRODUCTION

Psychotechnics is a relatively young branch of psychological research and application. In the international context we can recall that HUGO MÜNSTERBERG, then prof. at Harvard University, gave the first lectures on psychotechnics at the University of Berlin in 1910. His *Psychologie und Wirtschaftsleben* (Psychology and Economy), was the first systematic treatment of the subject and appeared in print in 1912.

During the First World War, psychotechnics developed rapidly in Germany and the United States. In Germany the psychotechnical examinations were focused on the selection of individual pilots and drivers while in the United States group developed tests of intelligence that were widely applied in the Armed Forces.

In Czechoslovakia the Psychotechnický ústav (Psychotechnical Institute) was founded in 1920 as the first of the Institutes established within the framework of the newly founded Masaryk Academy of Work (MAP). The task of the Institute was defined as research on the efficiency of human physical and mental work and the application of the research findings (BROŽEK and HOSKOVEC, 1986 a, b).

The tasks of the Psychotechnical Institute were specified in greater detail in a document, entitled „Organization and basic rules“ (MAP PtÚ XIII.2.1141) and formulated in 1926, as follows: „To engage in research and in practical activities in the field of psychotechnics (psychotechnika).“ This involves analysis of occupations, development of methods for the assessment of abilities for specified occupational activities, and statistical analysis of the results (with reference to the inter-correlations of the test scores and their validation in terms of the criteria of occupational effectiveness).

It was noted „the concerns of the Psychotechnical Institute will extend to all areas of human work, including industry, business, transportation as well as intellectual pursuits“.

In accord with the increasing range of responsibilities, the title of the Institute changed between two World Wars from Psychotechnical Institute to Central Psychotechnical Institute (1932) and Institute of Human Work (1938).

Our earlier papers (op.cit.) were intended as contributions to the regional history of psychology in Czechoslovakia. In the present paper we shall consider the

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^{†)} See obituary of J. Brožek who died 2004 by J. Hoskovec in *American Psychologist*, 2004, 59, 564; *History of Psychology*, 2004, 7, 297-300 and in *Teoría y Investigación en Psicología* (Lima, Peru), 2004, 13, 193-200.

¹⁾ This paper was partly published in *Revista de Historia de la Psicología*, 1986, Vol. 7, No. 3, 39-53.

development in a wider context, as a part of the international history of applied psychology.

We shall approach the subject in terms of the following categories of criteria: Personal contacts, bi-directional in nature, i.e., involving visits and other professional contacts of scientists and technical personnel from abroad, and visits and longer periods of study of the Czech psychotechnologists in other European countries. We shall consider the exchange of letters as well as citations of foreign authors in selected publications, and international congresses.

The pertinent materials are held in the Central Archives of the Czechoslovak Academy of Sciences in a folder designated MAP 361 XIII.8.1149, bearing the title „Psychotechnical Institute. Foreign contacts. 1921-1926“.

1. DIRECT CONTACTS

The first director of the Psychotechnical Institute, Dr. PETR RŮŽEK, was trained as an engineer and had served prior to the foundation of the Institute as an assistant at the Czech Technical University in Prague. He agreed with the plan, approved by the scientific council of the Masaryk Academy of Work that a professionally trained psychotechnologist should be in charge of the professional matters concerning the Institute. Unfortunately, at that time there was no such a person available in Prague. It was agreed that a consultant should be engaged. On the recommendation of Prof. W. STERN of Hamburg and Prof. O. LIPMANN of Berlin, arrangements were made with Dr. W. BLUMENFELD that he would serve as a consultant during 1921 and 1922, coming to Prague from Dresden.

1.1 Visits and studies abroad

The visits abroad made by the staff of the Psychotechnical Institute were of two kinds: shorter and longer. For shorter periods of time the Prague psychotechnologists visited a variety of institutes abroad, especially in Germany.

On May 12, 1922 the Prague Psychotechnical Institute addressed a request directed to the Vienna Büro für unentgeltliche Berufsberatung (Bureau for free vocational counselling) to permit two members of the staff to visit the bureau so that they could familiarize themselves with the procedures being used.

A communication sent by the director of the Prague Institute to the Czechoslovak Embassy in Vienna, dated May 29, 1922, indicates that a permit was being requested to visit also another Viennese institution, Hauptstelle der niederösterreichischen Landesberufsvormundschaft.

In September of 1926, Ing. A. DRATVA, from the construction division of the ministry of public works, and very active in the Masaryk Academy of Work, visited the Psychotechnische Versuchs-Stelle der Deutschen Reichsbahnen and Verwaltungsakademie nebst Deutsches Instituts für wirtschaftliche Arbeit in der öffentlichen Verwaltung.

Longer study visits were made by V. FORSTER to Paris in 1922 and 1923. The journeys were made in the early 1920s by J. STAVĚL and by J. VÁŇA, which included stays of several months in England, but are not documented in the archival materials to which we had access (cf. VÁŇA, 1926).

1.2 Visits from abroad

In the early years of the Psychotechnical Institute, professional visitors came from the United States of America, France, Switzerland, Germany, and Spain.

1.2.1 United States of America

A great deal of interest was generated by the visit of FRANK GILBRETH to Prague from the 24th to the 28th of February 1922. His public lecture was given on the 25th of February in the Physics Hall of the Czech Technical University. The large hall was filled to capacity. The presentation, accompanied by slide projection and given in English with simultaneous translation into Czech, was followed with vivid interest. The subsequent question and discussion period extended to almost 3 hours.

The author focused on procedures for increasing productivity and increasing the wages while reducing the production costs. He noted that some translations of his writings into German were incorrect and led to a faulty presentation of his views. His attitudes to the traditional methods of production were critical. He said, literally: Instruments and equipment, such as chairs, are usually made like coffins. The worker who actually makes the coffin is not interested in using the product. The person that orders the coffin and pays for it does not need it for himself while the person for whom it was made, has no longer anything to say about it.

The appreciation in high places is reflected in the fact that on the 27th of February GILBRETH was received at a lengthy audience by T.G. MASARYK, president of Czechoslovakia, in his country residence of Lány, near Prague. The account of „the visit of an outstanding American engineer, prepared for internal records of the Psychotechnical Institute“ (item 441/22) notes that „he (F.G.) was received very warmly by the President and that he regarded this encounter as a great event in his life“.

1.2.2 France and French-speaking Switzerland

Similarly, the visit of I. MEYERSON, director of the laboratory of physiological psychology at the Sorbonne, attracted substantial attention. On the 4th of October 1923 MEYERSON spoke in the Hall of the Chemical Institute of the Czech Technical University on the assessment of performance capacity of the military and civilian aviators from the medical and psychotechnical point of view. Using slides he showed some of the instruments that were actually used. This lecture was considered as an outstanding introduction into the use of psychotechnical methods for an effective utilization of the human factor.

At the recommendation of PIERRE BOVET, director of the Institute J.J. Rousseau, Geneva, Miss MARTHA GAIRING (of St. Gallen, Switzerland) received a stipend from the Czechoslovak Ministry of Education, which made it possible for her to observe and take part in the activities at the Psychotechnical Institute of Prague between September 10 and October 19, 1925.

1.2.3 Germany

An early reference was made to the contract with Dr. W. BLUMENFELD of the Technical University of Dresden who was to provide consulting services to the Psychotechnical Institute of Prague during its first two years.

In 1928, the Institute was visited by JAN DOLEŽAL, a Leipzig University Ph.D. (1930), then assistant at the Psychotechnical Institute of the Technical University of Dresden. DOLEŽAL discussed the potential participation of the Psychotechnical Institute of Prague in a new journal for applied psychology, to be edited by Prof. E. SACHSENBERG, director of the Dresden institute. Subsequently (on February 7, 1931) Prof. SACHSENBERG paid a professional visit to the Psychotechnical Institute of Prague. He was accompanied by Dr. JAN DOLEŽAL who in 1932 became a vice-director of the Prague institute, renamed Central Psychotechnical Institute (cf. RICHTER, 1981).

1.2.4 Spain

The Spanish psychotechnologist, D. CÉSAR de MADARIAGA, served as the Spanish delegate to the Prague International Management Congress (abbreviated as PIMCO), which was held in 1924. Apparently he made personal contacts with his Czech counterparts.

In a letter dated February 6, 1926, Dr. ŠTANGLER, member of the II. Division of the MAP, communicated to the Psychotechnical Institute in Prague, that during his recent stay in Spain he had the opportunity to visit also the Instituto de Reeducación Profesional del Trabajo, Carabanchel Bajo, Madrid (Institute for Professional Reeducation of Handicapped Workers), where de MADARIAGA informed him about the activities of its psychotechnical laboratory.

Dr. ŠTANGLER notes that he is forwarding a copy of the reprint of de MADARIAGA's paper on psychotechnics, presented at a conference in the Institute of Civil Engineers (de MADARIA-

GA, 1925), a document that is preserved in the Central Archive of the Czechoslovak Academy of Sciences (MAP 361 XIII.8). Dr. ŠTANGLER comments that the staff of the Psychotechnical Institute of Prague should maintain active contacts and collaboration with specialists from abroad, including Spain which, for various reasons, is isolated from other countries. The writer of the letter recommends that de MADARIAGA be nominated as a foreign correspondent either of the Psychotechnical Institute or of the Masaryk Academy of Work, should such a class of membership be established.

There are preserved in the Archives also several forms (fichas) used by the Madrid laboratory, such as the ficha informativa, psicológica, psicotécnica, fisiológica. The „psychological“ form deals with intellectual functions (general intelligence, attention, imagination), several kinds of memory (visual, auditory), reaction times and suggestibility. The „psychotechnical“ form served to record the results of the examination of motor functions (including strength, speed and precision of movements), fatigability, and perceptual functions (perception of forms, lengths, weights, speeds, and rhythms).

1.3 Correspondence

We shall divide correspondence into two categories: (1) correspondence from abroad and (2) correspondence directed abroad.

1.3.1 Correspondence from abroad

P. PERSANT SNOEP, a Dutch engineer, holder of doctor's degree from the Technical University of Delft (Dissertation: Technisch-hygiënische Beschouwingen over de Economie van den Industriellen Arbeid, published in Leyden, Holland) inquired on January 13, 1921, about the possibility of familiarizing himself with the activities of the Prague Psychotechnical Institute during the summer of 1921. He was informed that a visit in September would be welcome.

F. PAULSEN, editor-in-chief of the journal Bauwelt, in his communication dated December 29, 1921, informed an inquirer (Psychotechnical Institute) about initial observations concerning the psychological and physiological aspects of bricklaying. The materials, obtained on behalf of the Forschungsgesellschaft für wirtschaftliches Baubetrieb (Research Society for Public Construction), were deposited at the Architektenverein zu Berlin, Wilhelmsstrasse 22.

In his „Thank you“ note, dated March 29, 1922, FRANK GILBRETH, American specialist in scientific management who visited Prague and gave public lectures, wrote: „I am placing your name (Dr. RŮŽEK's) among those of the Fatigue Committee of the Society of Industrial Engineers and am sending under separate cover a copy of „Nation's Health“ for February 22, 1922, which shows the work one of our members, Prof. HENRY J. SPOONER of the London Polytechnic Institute of England, is doing. His work in Fatigue Elimination is attracting a great deal of attention on both sides of the Atlantic, and I hope that you will find his article of interest and value“. GILBRETH added: „I am also enclosing applications for membership in the Taylor Society and the Society of Industrial Engineers“. In a later communication (letter of February 13, 1923) GILBRETH informs Dr. RŮŽEK that he received applications of two Czech specialists (C.J. NIEDERLE and E. ŠLECHTA) and that he sent the applications to the American Society of Mechanical Engineers, together with his endorsement of the applications.

On April 17, 1922 CURT PIORKOWSKI, director of an Institute for the Study of Human Work and Psychotechnics (Institut für Arbeitswissenschaft und Psychotechnik, in Berlin) wrote a personal letter to Dr. RŮŽEK, director of the Prague Psychotechnical Institute, in which he informs RŮŽEK that he has available unpublished articles on the measurement and on the broader issue of assessing of abilities (Eignungsprüfungen). He would welcome their publication in Czech as well as in Russian and writes about this matter, because Dr. RŮŽEK spoke to him about a plan to visit Moscow.

On April 16, 1922, CURT PIORKOWSKI, informed the „Psychotechnical Division“ of the Masaryk Academy of Work that they have available all the apparatus required for testing the aptitudes of drivers of automotive vehicles (such as streetcar conductors, car drivers, and railway engineers). He notes that the equipment is being used by the testing center (Prüfstelle) of the Streetcar Co. of Berlin, and specifies the costs and arrangements for delivery of the apparatus. Enclosed was the reprint (from Monatsblätter des Berliner Bezirksvereins Deutscher Ingenieure, Nr. 12, December 1919, p. 159) of an article on „Eignungsprüfung und Ausbildung von Fahrzeugführern auf psychotechnischer Grundlage“ (Examination of the abilities and the training of drivers – Psychotechnical foundations).

Letters concerning psychotechnical apparatus and its cost were received also from HANS RUPP (Division of Applied Psychology, Psychological Institute of the Berlin University). One letter is dated August 20, 1923, the other letter is undated. M. PONTÉGRAL (Commisariat Générale de la République Française), in a note written in Strasbourg on January 3, 1923, acknowledges the receipt of a questionnaire, prepared by the Psychotechnical Institute in Prague.

Several communications (September 25, November 20, December 3, 1923) deal with the application of Dr. FORSTER for an individual membership in the Personnel Research Federation (New York). The letterhead specifies that the object of the Federation, then chaired by ROBERT M. YERKES (National Research Council), is „Correlation of research activities pertaining to personnel in industry, commerce, education and government whenever such researches are conducted in the spirit and with methods of science“.

A program of courses given at the Institut de Psychologie (Université de Paris), including courses in applied psychology, attests that the Prague Institute kept itself informed about current teaching activities abroad.

In the letter dated September 19, 1925 and sent from Solothurn, Switzerland, FRANZISKA BAUMGARTEN-TRAMER informs Dr. FORSTER that she is engaged in writing a book on psychotechnical selection and would appreciate receiving detailed information about the examinations used for testing applicants for such occupations as streetcar conductors and pilots. The author adds personal greetings, indicating that she was acquainted with the addressee.

1.3.2 Correspondence directed abroad

In a letter dated January 10, 1921, PETR RŮŽEK thanks Dr. ALEŠ HRDLIČKA (curator of the Anthropological division of the U.S. National Museum, in the Smithsonian Institution, Washington, D.C.) for making available „samples of psychotechnological examinations“. RŮŽEK acknowledged warmly Hrdlička's interest in the Institute, then in its very beginnings, and noted that „specialized literature that is being published in America“ would be most welcome. Since it was planned to establish several vocational guidance centers, „books and (other) publications in this field“ would be particularly appreciated. RŮŽEK also expressed interest in exchanging future publications of Prague Psychotechnical Institute with similar institutions in the U.S.A. The institute's publications were to have summaries in French and in English.

Several letters dated April 10, 1923 refer to a report presented in 1922 at the Milano congress of psychotechnics and sent out for information (e.g. to FRANK GILBRETH in the U.S.A. or to Dr. G. van WAYENBURG in Amsterdam).

On June 6, 1923, Dr. V. FORSTER, who replaced Dr. RŮŽEK as the director of the Prague Institute, contacted by letter HENRI PIÉRON (Laboratory of physiological psychology at the Sorbonne), thanking him for the kindness shown to him (FORSTER) during his stay in Paris. PIÉRON's visit in Prague, with the support of the Czechoslovak Ministry of Education, was considered for the coming school year (1923/1924). PIÉRON's counsel and help would be much appreciated. Concretely, FORSTER asked Prof. PIÉRON to kindly check if the equipment purchased from the company Pirard and Boulet is in working order. Reference is made also to the anticipated visit of I. MEYERSON who was to give public lectures and consult with the staff of the Psychotechnical Institute.

On the same day, June 6, 1923, FORSTER wrote directly to Dr. I. MEYERSON (Laboratory of Physiological Psychology at the Sorbonne) to invite him to speak in Prague under the auspices of the Masaryk Academy of Work. MEYERSON's reply is missing in the files but the President of the Academy issued a formal invitation to MEYERSON on August 24, 1923.

2. CITATION ANALYSIS

Citations of the literature and, more broadly, references in general, provide objective criteria for the quantification of the „realm of awareness“.

During the period between the two world wars no periodical specifically devoted to applied psychology was in existence in Czechoslovakia. The relevant articles were widely scattered.

Consequently, we have chosen three book-length publications as sources of data for a citation analysis: (1) An introduction to psychotechnology, published in the mid-twenties (VÁNA, 1926); (2) a monograph on the measurement of intelligence

(STEJSKAL, 1934); and (3) the first volume of the Encyclopedia of Efficiency (VERUNÁČ, 1934).

Since here we are interested in the interaction of the Czech authors of the 1920s and 1930s with the international body of literature, only the references to works published in other languages than Czech or Slovak will be considered. In the few cases in which translations were cited, we have credited the publication to the language area of the original. There were special problems in dealing with the work of Russian authors cited in the text by STEJSKAL (1934) who noted 3 publications in Russian and 16 publications of Russian authors that appeared in German. We have finally decided, not without some uneasiness, to treat all 19 publications as „Russian“. References to the proceedings of international congresses were omitted.

Both in VÁŇA (1926) and in VERUNÁČ (1934) the references are given in the bibliographies at the end of the respective volumes. The bibliography in VERUNÁČ (1934) does not parallel the book chapters and the publications are classified by topics. We have analyzed the references for 20 categories considered as most directly relevant, such as psychotechnics, fatigue and recovery, and vocational counselling.

The data for each of the three publications that were examined and for all of them combined are given in Table 1.

Table 1 References to international literature in 3 Czech publications

	English	German	French	Russian	Italian
Váňa (1926,N=24)	11	8	5		
Stejskal (1934,N=341)	132	144	46	19	
Verunáč (1934,N=229)	87	86	34	18	4
TOTAL (N=594)	230	238	85	37	4

The figures indicate a heavy predominance of the references to German and Angloamerican sources. It would have been desirable to separate references to materials published in Great Britain and the United States. Unfortunately such a separation was not technically feasible. The echoes of the French psychotechnical literature are substantially weaker while those of the Russian authors are weaker still and the references to the works in Italian represent less than one percent of the total references.

However, one may look at the data from another, perhaps more interesting and relevant point of view. In terms of their awareness of the technical literature of the day, the Czech authors of the 1920's and the 1930's were truly internationally oriented.

3. INTERNATIONAL CONGRESSES

On the 29th of August 1922, the director of the Psychotechnical Institute in Prague made an inquiry in French at the Institut J.J. Rousseau in Geneva, Switzerland, as to whether the Geneva Institute and the French psychologists would take part in the international congress of psychology to be held in Milano, and if the French had accepted the participation of the Germans.

The second part of the communication deals with a broader issue or, more precisely, two issues: (1) The writer asks if the moment would be regarded as propitious for founding under the aegis of the International Labor Office, in Geneva, an

international body concerned with exchange of information regarding the choice of vocation and psychotechnics and (2) if the Prague group made such a proposal, would it be recommended and supported by the Institut J.J. Rousseau?

Prof. P. BOVET responded on September 3, 1922, recalling with pleasure his earlier visit in Prague, including the Psychotechnical Institute. He informed the addressee that the International Congress of Psychotechnics is being organized by Institut J.J. Rousseau. He (P. BOVET) will not be able to be present but his colleague, E. CLAPARÈDE, director of the Institute's Laboratory of Experimental Psychology, will certainly be present, as will LÉON WALTHER, director of the Institute's section of „technopsychologie“. To P. BOVET's letter was attached a flyer (document No. 496/22 P.Ú.), which describes a course for psychological counselors (psychologues conseils). The lectures were to deal both with vocational guidance (orientation professionnelle) and scientific management (organisation du travail, with sections on anthropometry, physiology, psychology, and industrial hygiene). Practical exercises were to involve work in the laboratory, in industrial plants, participation in the practice of vocational guidance and placement, and assistance in medico-pedagogical consultations.

L. WALTHER, the moving spirit of „technopsychologie“ at the Institut J.J. Rousseau, planned to visit the Prague Institute following the Milano congress. BOVET noted that both the French and German specialists would attend the Milano congress, as they already had done in Barcelona. He welcomed the idea of RŮŽEK regarding the establishment of a section on psychotechnics in connection with the International Labor Organization (Bureau International de Travail) and noted that for the time being the Institut J.J. Rousseau provides consultations to the I.L.O. in these matters.

In a letter of June 28, 1923 LÉON WALTHER thanked his Prague host for a warm welcome in January 1923 and expressed the hope that the contacts between Geneva and Prague would become more frequent. WALTHER noted that he sent, as printed matter, some aptitude tests used at the Institut J.J. Rousseau and he would appreciate their transmission to the members of the staff (J. VÁNA and K. LÖRSCH) with whom he spoke about these matters during his visit.

For Czechoslovak applied psychology the most important international event was the VIIIth International Conference of Psychotechnics, held in Prague from 11th to 15th September 1934 (ŠERACKÝ, 1935). ŠERACKÝ, professor of psychology at Charles University and director of the Central Institute of Psychotechnics, served as the president of the Congress. The participation was truly international. For the Spanish readers it may be useful to note the presence of A. AZOY (Barcelona), J. GERMAIN (director of the National Institute of Psychotechnics, Madrid), Miss M. RODRIGO (Madrid) and J. XIRAU (Professor of the University of Barcelona). Dr. J. GERMAIN, together with C. de MADARIAGA (Madrid) and EMILIO MIRA Y LÓPEZ (Barcelona), served on the International Executive Committee.

A number of presentations was made by the authors of Czechoslovakia, both Czech and German. In the section dealing with industry, business and administration we encounter the reports of A. CIBULKA (Accident prevention in the steel mills in Vítkovice) and E. PECHHOLD (Selection of employees in Vítkovice). In the area of transportation J. MLS discussed intelligence in relation to the performance of the drivers of military vehicles while J. VÁNA reported on the accidents of streetcar conductors. In the section on counselling A. SMRŽOVÁ was concerned with the selection of nurses and J. STAVĚL considered multidimensional psychodiagnostics. Particular attention was given to the selection of students for the university (J. DOLEŽAL), the testing of the university students (O. MATOUŠEK)

and psychotechnical examinations at the universities, with special emphasis on the analysis of the student's interests. K. TRÍSKA discussed the problem of speed as a factor in work capacity.

4. PSYCHOLOGICAL INSTRUMENTS AND TESTS

In the beginning years of psychotechnics particular attention was given to the use of specialized apparatus. Some equipment was constructed in Czechoslovakia. Internationally best known is FORSTER's multiple-choice reaction apparatus, widely used for the testing of pilots and drivers of automotive vehicles (FORSTER, 1928). A modification of this apparatus (called Ostrava dispositiv) is used to the present time.

Instruments used in psychotechnical examinations in general and in the Prague Psychotechnical Institute in particular are liberally illustrated in a chapter by ŠERACKÝ (1934).

The principal sources of the apparatus acquired by the Psychotechnical Institute in Prague were France and Germany. The equipment originating in France was purchased with the help of the Ministry of National Defence at the recommendation of Dr. V. FORSTER who spent some time in France in 1922 and 1923.

In Germany the apparatus was purchased from several suppliers, including the famous manufacturing company of E. ZIMMERMANN in Leipzig. A number of instruments came from Industrielle Psychotechnik, located in Charlottenburg and directed by W. MOEDE. It should be noted that members of the staff participated in courses offered by the German manufacturers to the users. Thus they attended a 3-month course held at Charlottenburg.

We wish to note that a small museum, attached to the Department of Psychology, Charles university (Celetná 20, 110 00 Prague 1), contains a variety of psychological apparatus constructed before the Second World War. The apparatus served for research in general experimental psychology as well as in psychotechnical practice. In addition there is in the museum a collection of catalogues of early psychological apparatus, mostly in German, some with English, French and Spanish descriptions. Many of the apparatus are illustrated in the catalogues (HOSKOVEC and ŠTIKAR, 1984). Attached to the Department is also an Archive of paper-and-pencil tests and questionnaires from different parts of the world (HOSKOVEC and ŘÍČAN, 1962 and 1965).

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EARLY CHILD DEVELOPMENT IN A FAMILY OR INSTITUTION?

Selected Findings from Czech-French research study

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ABSTRACT

Forty one Czech children (23 boys, 18 girls, aged two years) were videotaped in three different situations, while they played with seven toys. Each child was observed for 20 minutes and the footage was afterwards subjected to a microanalysis. An analysis rested upon three categories: Child, Mother and Nursery Nurse, subdivided into 7 subcategories (Emotions, Motorics, Manipulation, Visual Attention, Vocalisation, Posture, Physical Contact).

The fundamental aims of the analysis were:

(1) to monitor the child's specific expressions with the mother and with the nursery nurse, (2) to monitor the differences between boys' and girls' behaviour while with their mother and with the nursery nurse, and (3) to monitor the possible cultural specifics, for Czech and French children.

Key words:

mother-child relation,
strange situation,
video microanalysis

SOCIAL CONTEXT OF THE STUDY

After seven years of co-operation between the Department of Psychology in the Faculty of Philosophy at Charles University and the University of Toulouse Le Mirail, the authors became so aware of each others' local specifics that this remarkable and interesting study subject naturally came to mind.

Both countries, although close to each other at the moment, have had quite different developmental histories over the last 150 years in terms of family structure, dynamic, functions and the position of family in society. Women's position in the family and society, women's employment rates and overall perceptions of women's roles show themselves as the most remarkable differences.

In the Czech Republic there has been a rather high rate of employment of women as early as the mid-1800s, which was related to the need for a workforce in light industry. At that time it was very well developed. This quite progressive process of women's growing independence from their families (mainly in the economic sense) created a good environment for women's overall independence.

Many types of pre-school facilities were then established in which women could leave their children trusting they would be well cared for.

The actual history of pre-school facilities began with a law from 1869 that established pre-schools (nurseries). A bill in 1872 distinguished between the pre-schools (aiming to develop the child's physical, sensorial and mental skills and abilities and to prepare the child for school), baby-siting centres (similar to pre-schools – they accepted children aged 3–6 but their aim was not the child's development and school preparation) and nurseries (nurturing institutions operating under medical rules and caring for children under three years of age) (National Report, 2000).

This economic influence was further amplified by politics and the communistic propaganda that favoured „collectives“. Institutions also played a certain role. In the post-World War II period, families had to „defend“ their position against this influence. Communistic propaganda made an excessive show of support for institutional childcare from a very early age. Children were in some cases admitted into nurseries as early as infancy.

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In the Czech Republic, these issues have been on the agenda for some time since Czech society has been forced to come to terms with women's employment and consequently with the responsibilities of group childcare facilities for children's early development.

Note 1: A description of the birth of interest in the child's early development in the nursery/classroom, and of relevant studies conducted in the Czech Republic during the 20th century, can be found in Sulová, 2005 a.

It may be said that the traditional experience of Czech women, combined with the research and media efforts of education professionals and the option of taking up to three years' maternity leave (with one's employment position held open), lead to the current situation in which there are almost no facilities (nurseries) caring for children under the age of three.

The National Report 2000 states: "The extension of maternity leave up to the fourth year of a child's age showed a positive impact, as there has been a reduction in the number of nurseries run by the Ministry of Health catering for children under the age of three, and there remain only a few facilities operating under private ownership or run by local authorities. The primary public early year childcare facilities are pre-schools, and pre-schools for children with special needs."

Note 2: National Report on the State of Pre-school Preparation, Education and Childcare for Children Aged 3-6 in the Czech Republic. MŠMT ČR, OECD 2000.

The organisation of the traditional French family was, by contrast, until the 1960s, such that the family was quite large and supported economically by the man whereas the woman was looking after children and was highly respected in society for her social role. In the post-World War II period, French family politics drew heavily on the psychoanalytical work of, for example, S. Freud, R. A. Spitz and J. Bowlby. Their work supported ideas such as: the primary childcare role is held by the mother; a good foundation, built on caring for the mother and the child, is linked to a positive image of 'the good mother' (i.e. a carer who sees that the child comes first); and the significance of emotional development. As a result, the views of French society at that time were not coherent with the more modern ideas about placing children in any group childcare facilities.

The significant political changes in May 1968 introduced, among others, a demand for women's rights in professional life, employment and particularly the right to a balance between work and family. Many ideas coming on the back of this movement brought a reconsideration of the post-war facts. The primary role of the mother and her maternal instincts was passionately rejected as an expression of sexist ideology. Reviews of family issues legislation were re-balanced in favour of women and mothers (see the family laws of 1970-72). This positively influenced society's attitude towards group childcare facilities. The immediate cause of the growing number of nurseries was the movement of women towards professional work in the 1970s. The developmental psychologist (Lézine) and medical doctors (Aubry, David, Appell, Soulé) fought for the modernisation of conditions of early childcare as their studies showed that emphasis should be put on the types of childcare that would support the development and socialisation of the small child over and above plain babysitting (let us clarify that the term *accueil/acceptance* replaced the term *garde/look after* that was in agreement with 'Research into Types of Nursery Childcare of the EC Commission' (Réseau des modes de garde de la commission de la communauté européenne; Bosse-Platière et al., 1995, 9).

A. Math and E. Renaudat offer a more detailed review of the last 20 years. In 1980-1984 the emphasis was put on the development and diversification of types of group childcare facilities (collective, family and parental nurseries).

Note 3: Collective nurseries are intended for children aged 3 months to 3 years whose parents are both working. The childcare is provided from 7 a.m. to 7 p.m. The average length of time a child stays in the nursery is 9 hours daily. Children are grouped by age. In particular, parents who fear that their child might develop too great an attachment to another authority seek this type of nursery. Several adults are present with the child during the whole day. Nurseries each admit around 40 children and many parents find that disadvantageous. Parents also dislike the strict timetable for activities.

In family nurseries, childcare is provided by the 'maternale assistents' (childminders). They care for children aged 3 months to 3 years. Care is provided between the hours of 7am and 7pm and, on average, children stay in the nursery 11 hours a day. The nursery routine is adjusted completely to the needs of the parents. The childminder usually looks after one or more children (though rarely more than 3) in her own home. Many parents choose this type of nursery because its organisation is similar to their own family organisation but for some parents this is a negative factor because of the risk that their child may become emotionally attached to somebody

other than their parents. Often it is necessary to resolve the question of the roles of both women (the mother and the childminder).

Parental nurseries are a type of nursery that a child attends for shorter time periods, the average being five hours a day. The parents are obliged to participate in the running of the nursery at least once a month, as the parents constitute an association looking after the children together. This leads to the parents showing a greater interest in the childcare practices employed as well as to them comparing their own child with other children. The enthusiasm with which those nurseries were created in the 1980s is now slowing. This type of nursery places considerable demands on the parents, for which they are not always prepared.

Another type of childcare attended by children under the age of three is the **'halte-garderie'**. Well known in France, this is a drop-in care centre for short baby-sits (up to a maximum of 15 hours per week).

Moreover, there are many centres that parents can attend with their children free of charge and profit from contact with other children of their age. Some centres have their niches, for example painting or physical exercise. (Šulová, 2004, p. 170).

In the period 1985-89, childcare services with mixed structure were created, which combined the features of collective nurseries, 'ludotheques' (places where children can borrow games and toys) and drop-in care centres. For example at the moment 'I.A.G.E.D.' are being introduced (in which there is no requirement for staff to hold childcare qualifications). The parents' demand for greater flexibility in the choice of types of childcare coincides with the higher flexibility of the work market.

The differences in resolving the childcare issue in the first years of the child's life have led to a study project (Note 4: the study was implemented with the support of GAČR n. 406/01/0220; the project leader was L. Šulová) with colleagues from the University of Toulouse, where they have been focusing for a long time on the issue of development of small children – so-called 'double socialisation' or early socialisation. The socialisation of children under three makes it easier for them to gain social skills such as respecting rules, ability to integrate into a group, a sense for co-operation, understanding of regulations and social values and integrating them (Zaouche-Gaudron, Baumatin, 2000).

The work of our French colleagues is based on the theory of H. Wallon and P. Malrieu (who, however, considered that non-family socialisation only occurs when a child starts attending pre-school, i.e. at age 3) and from the theory of J. Bowlby.

The analysis of pre-school institution as such and its current quality is not the aim of this study. The question that we ask is, however, very closely related to this issue.

To what extent does the absence of the mother in the family and placement of a child under three in a group childcare facility influence the early mental development of the child?

In other words, is a two-year-old child able to make an attachment to their nursery nurse on a qualitatively equal level as to their mother?

FIRST STAGE OF THE STUDY

Our aim was to thoroughly resolve the issue of whether the placement of a child in an institution before the age of three has a positive, neutral or negative impact on their further development.

The three-year project was based on a study that was carried out by the French side.

Note 5: It was published in 2000 under the title „Interactions between mother, child and nursery nurse“ („Les interaction meres-enfants-accueillantes“), which mapped current situations in various day-care nursery facilities in France. The project is led by CH. Zaouche-Gaudron with her research group.

In the first stage of the project we employed a system of assessment that was derived from the original 'Attachment Q-Set' system (Waters, Deane, 1985) and a French-Swiss variation that was derived from this original. (Pierrehumbert, 1995, Zaouche-Gaudron et al. 2000). This diagnostic tool was an alternative to M. S. Ainsworth's 'Strange Situation' assessment system which, in turn, focused on the idea of child-rearing influences of the mother and the nursery nurse in the process of socialisation of the child. Our system of assessment, after certain modifications, followed 6 fundamental scales:

Scale A – Childcare Practices

Scale B – The Mother's Child-Rearing Function

Scale C – Values Emphasised for the Child in its Upbringing

Scale H – Characteristics (maturity and behaviour) of the Child in Nursery

Scale I – Conception of the role and function of the Nursery Nurse

Scale J – The Relationship between, and Communication between, the Mother and the Nursery Nurse

The study sample comprised 59 mothers, 59 fathers and 59 nursery nurses in France and 50 mothers and 50 nursery nurses in the Czech Republic. On the Czech side, in addition, a pre-study was carried out due to the necessity of making language modifications and to find out, which components needed to be excluded because of the differences in language context. In the Czech Republic, as opposed to in France, fathers did not participate in this stage of the study. In France and Czech Republic the children were from two-parent nuclear families and were aged in France 25 ± 1 months; in the Czech Republic the children were aged 24 ± 2 months. In both countries the children were attending day-care nurseries.

Note 6: The results of this part of the study were presented at the AIFREF-EUSARF congress, Leuven 2003 (Šulová, Zaouche-Gaudron) and published in detail in an article by L. Šulová, CH. Zaouche-Gaudron, G. Espiau, 2006.

SECOND STAGE OF THE STUDY

In the next stage of the study we focused on the behaviour of children aged two. This meant a detailed analysis of the child's behaviour in the absence/presence of the mother and in the absence/presence of the nursery nurse, within the environment of the day-care nursery. Our inspiration was the so-called 'Strange Situation' – a method created by M. S. Ainsworth. (*Note 7: This method is described in detail in Šulová, 2004*). Video recordings were taken under the same conditions: the filming was carried out in a closed room that no one could access except the persons involved. The 41 Czech children (23 boys and 18 girls) were filmed in the three different situations, while they played with seven toys (a washable book, a picture book, a drum, a tambourine, building blocks, beads on a wire, a telephone). In all situations, two video cameras were used for filming: one, mounted on a tripod, filmed the overall situation for the duration of the test; the other, a movable video camera, was kept focused on the child. Overall, each child was observed for 20 minutes and the footage was afterwards subjected to a microanalysis. Observation and filming was carried out in the nursery.

In the first situation the child played with the mother and the nursery nurse for 8 minutes. In the second, lasting 6 minutes, the child was accompanied only by the mother, while the child carried on playing. In the third situation, lasting another 6 minutes, the child was accompanied only by the nursery nurse, while the child continued to play.

For the analysis of each display of specific behaviour we used three basic categories: Child, Mother and Nursery Nurse. Each of these categories was subdivided into 7 identical subcategories: Emotions, Motorics, Manipulation, Visual Attention, Vocalisation, Posture/Position, Physical Contact. Each of these subcategories was further divided into about 12 concrete expressions, which meant that altogether a 20-minutes video recording was analysed using 3 x 87 expressions.

In addition we distinguished on a more general level between the child's relationships with a person, with an object and the absence of interest in, or interruption of, their actions.

The fundamental aims of the analysis were:

- **To monitor the child's specific expressions with the mother and with the nursery nurse.**
- **To monitor the differences between boys' and girls' behaviour while with their mother and with the nursery nurse.**
- **To monitor the possible cultural specifics for Czech and French children.**

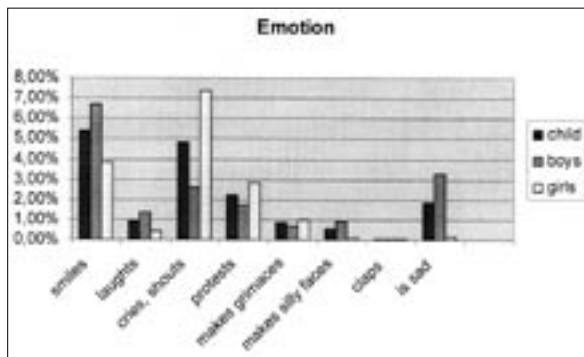
The implementation of the third aim was possible thanks to the offer of the partner university in Toulouse where similar observations, which aimed to compare three currently available types of nurseries in France, were carried out by a group of researchers under the leadership of Prof. Chantal Zaouche-Gaudron. Their final analysis was not, however, carried out using the computer system Interact (that was used at our university) because the University *Le Mirail* did not have access to this system. The analysis was instead carried out using the standard system of assessment by 10 independent professional observers. Our research group has been transferring those analogue video-recordings into a digital form and as soon as we receive all necessary resources for its analysis we will have all the requirements for a completely accurate comparison of the Czech and French observations.

THE SELECTED RESULTS FROM THE SECOND AND THIRD YEAR OF THE RESEARCH

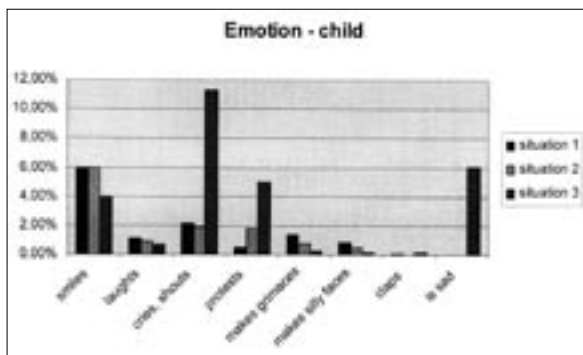
Now we would like to present a few selected results of the microanalysis of the 20-minute video-recordings of 30 (out of 41 observed) Czech children that are available at the moment, after they were processed by the computer system Interact. *Note 8: It should be noted that this system is no longer used in current research (2004-2006) for carrying out observations of children aged 12, 24 and 36 months in a family environment) because it showed itself as unsatisfactory. It was originally created for the comparison of the early mother-child interaction by H. Papoušek and M. Papoušková, where fewer categories were used and where the child was secured in a chair. Our research, however, requires the use of a large number of subcategories and that the child be free to move and be of various ages. The author of the computer program V. I. P. created by our research group is T. Hrdlička.*

Emotions

In both genders, smiling was a dominant expression. The boys showed more positive emotions than girls. Crying was also significantly represented, especially in girls. Protest was significantly represented in boys. Crying and protest significantly dominated the third situation – after the mother had left the child – with no difference shown between the genders. The surprising fact was that the mothers and the nursery nurses were, in this subcategory relatively inactive, but this could have been influenced by the research situation that could be expected to lower these expressions in adults. *Note 9: The vertical scale represents the percentage of time occupied by a given activity. 100% is therefore 20 minutes filming time (except in the cases where specific situations are being described, where 100% represents 8 minutes in the first situation and 6 minutes in the second and third situations).*



Graph 1



Graph 2

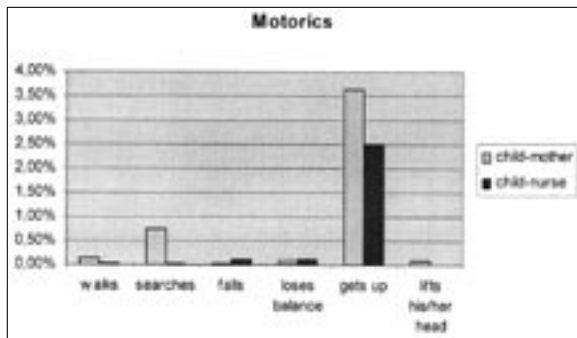
Motorics

The most numerous action shown is ‘gets up’ due to the fact that the child is always acquiring new toys and they are getting up to go from one toy to the other. This action is much reduced in the situation where the child is stressed by the mother’s departure in the third situation. The motor activity regarding the mother and the nursery nurse is interesting – how they stimulate the child, what position they take towards the child – however the data is not yet fully available. Regarding the child it seems interesting that actions shown towards the mother predominate in situations where both the mother and the nurse are present. When only one carer was present, the child showed similar behaviour regardless of which one was present. Therefore, when the mother is not available the child will find the same quality of stimulation elsewhere. In other words, the Czech nursery nurse can be a quality substitute for the child’s mother. The mother is a bit more active in the behaviour she shows towards the child. *Note 10: Those comments we are making are only anticipatory and are derived from the graphic representation and not from statistical analysis. A deeper statistical analysis is currently being carried out.*

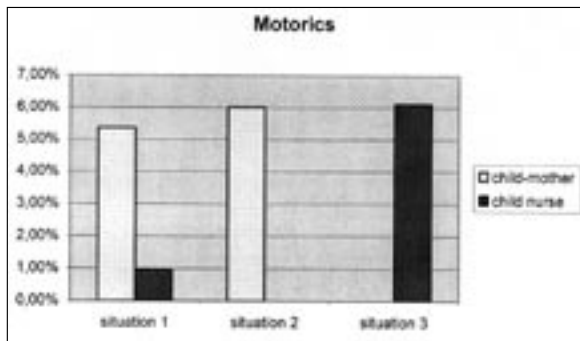
Regarding motor expressions, these actions slightly predominate among boys. The nursery nurses are more active in relation to girls and their motor activity is expressed mainly by an effort to offer the girls toys or to try to get their attention by other means. This result can be connected with the fact that girls cry a lot in the third situation – after the mother has left – and the nursery nurse tries harder to comfort them than she does the protesting boys. However, for this speculation we do not have yet enough proof.

Manipulation

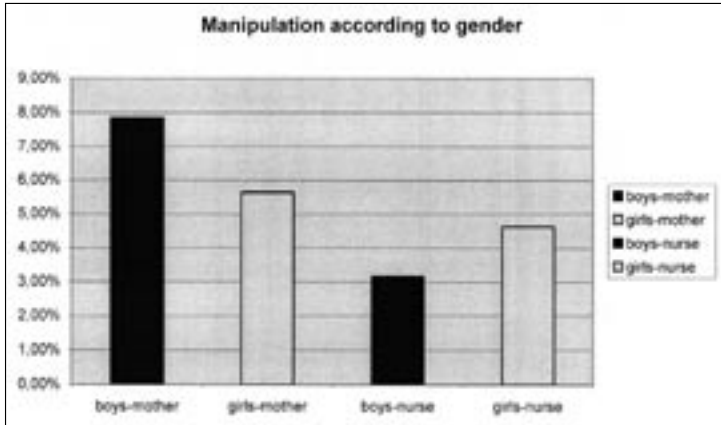
Considering gender, boys play with their mother more than girls. Also there is a big difference in the scale of manipulation with the toys when the boy-and-mother situation is compared with the boy-and-nurse situation. Boys’ manipulation is predominant while they are with the mother,



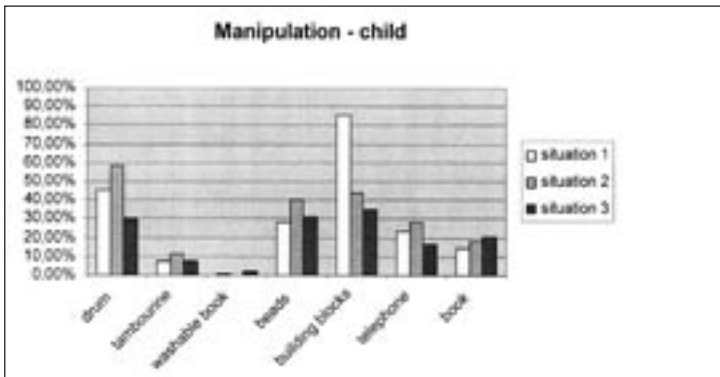
Graph 3



Graph 4



Graph 5



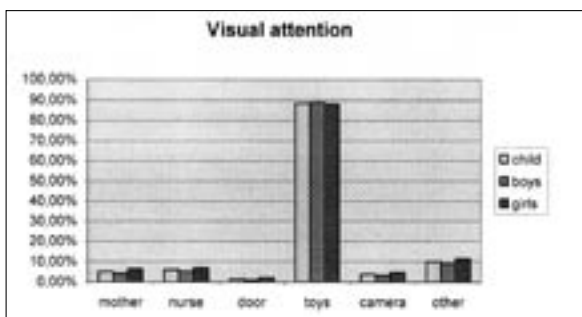
Graph 6

as if the boys were more faithful to their mother or were more afraid of strange persons? Girls play with their mother nearly as much as with the nursery nurse. It could be that they show more social ability in getting attention from other people than their mother or it could be that they sense that in the environment of the nursery it is the nursery nurse who is the person in authority. The most commonly used toys (and therefore the children's favourites) for both genders throughout the entire study were the building blocks and the drum. This subcategory was the most numerous from all studied subcategories.

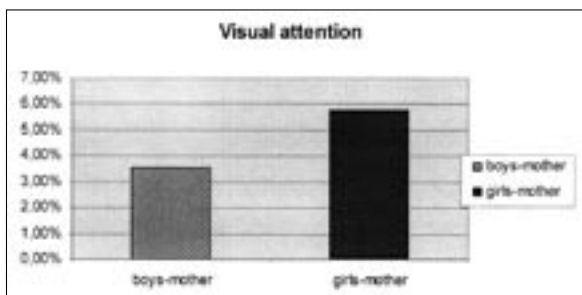
Another important finding is that the toy manipulation stops in the third situation when the child is stressed by their mother's leaving. In the case of the nursery nurse leaving (in the second situation) we don't observe such an effect. The only exception to this was the case of manipulation of the book, which was probably due to the nurse's effort to get the child's attention using the book after the mother had left. She often started to 'read' for the child.

Visual attention

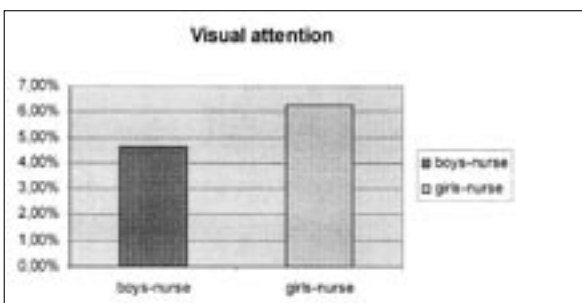
Visual Attention is the second most common subcategory in all persons involved of both genders. Girls look more at both adults than boys. Both genders look more at the nursery nurse than at the mother (it may be a sign that they understand the nurse as the local authority). This subcategory shows the biggest differences between the child and the mother/nurse in each situation. In the first and second situations, children look mostly at the toys. The mother and nurse mainly initiate eye contact.



Graph 7



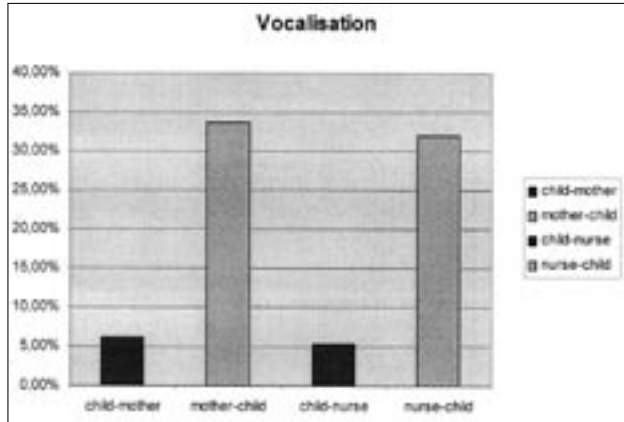
Graph 8



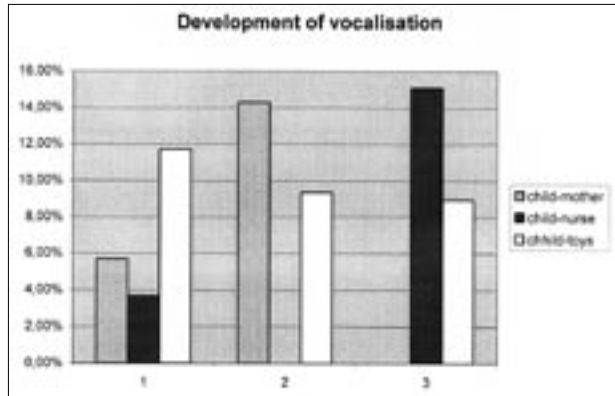
Graph 9

Vocalisation

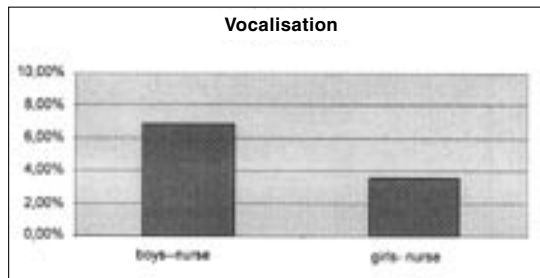
During the first situation the child communicates mainly with the toys, and speech expressions outweigh sound expressions. In the situations where the child is either just with the mother or just with the nursery nurse, the child shifts their expressions from the toys to that person. The boys speak with the nursery nurse more than the girls do, while both boys and girls speak with their mother to the same extent. The quality of the verbal expression does not yet indicate a link to gender. The quality of the verbal expressions is unambiguously linked with encouragement from the mother and/or nurse. The subcategory 'Vocalisation' divides the sample of mothers into two groups: mothers who mainly do not speak (more frequently mothers of girls) and those who mainly employ verbal expressions to try to get the child's attention (more frequently mothers of boys).



Graph 10



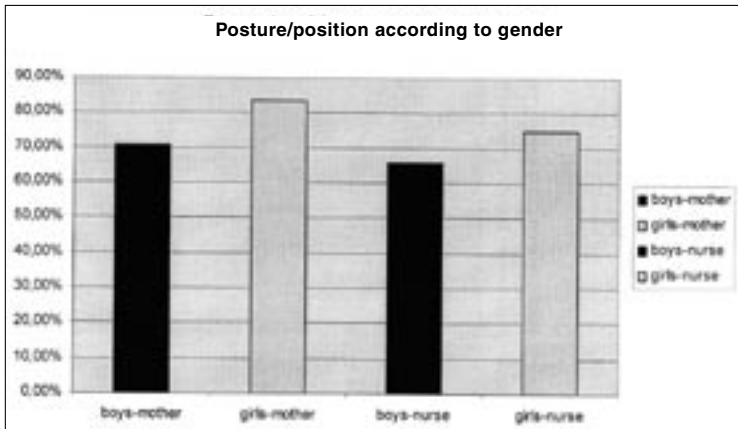
Graph 11



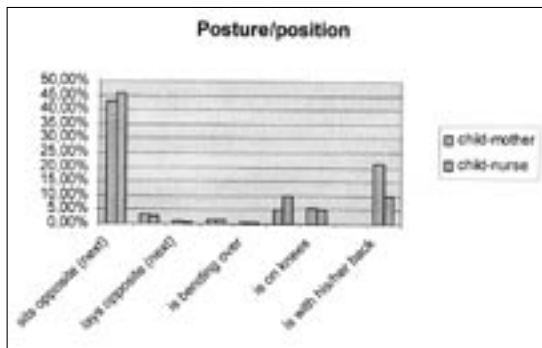
Graph 12

Postures/positions

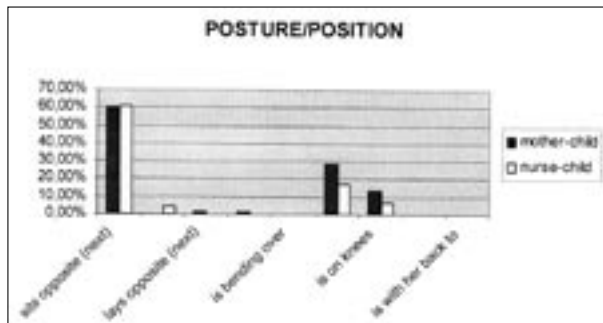
All mothers faced their children, usually sitting opposite them on the floor or lying next to them, and following them during their activities. Both boys and girls usually positioned themselves towards their mother. The most common position that they took was sitting opposite their mother, next to her or with their back to her. This position (with back to the adult) is uniquely employed with the mother.



Graph 13



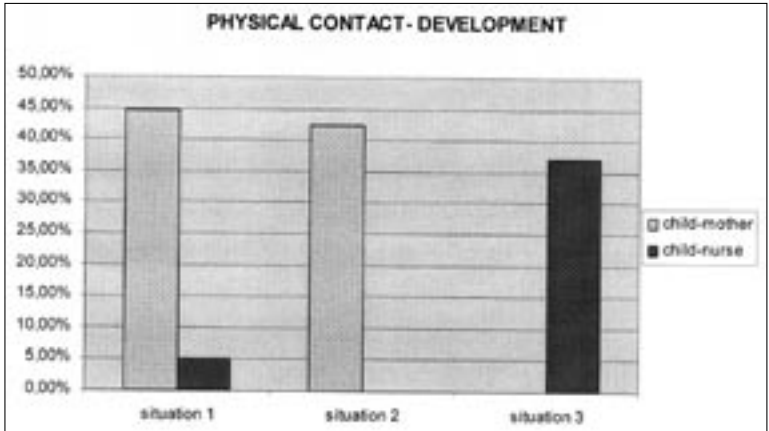
Graph 14



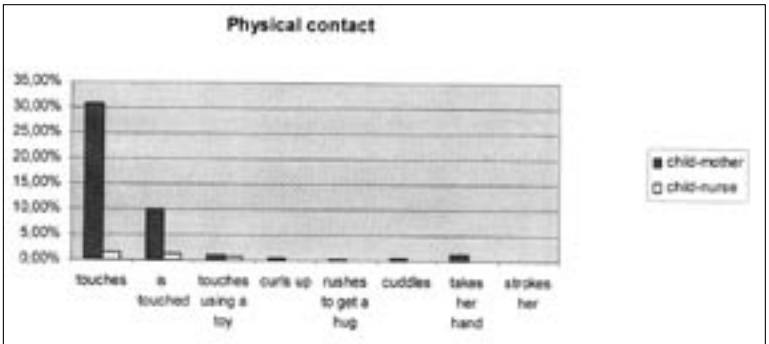
Graph 15

Physical contact

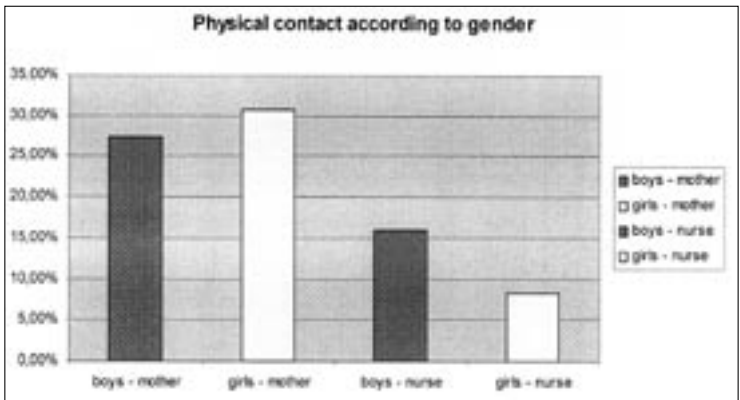
In the first situation, where both adults are available to the child, the child unambiguously chooses the mother for physical contact. Out of the range of options, 'touches' and 'is touched' predominate, again mainly with the mother. In physical contact regardless of gender, contact with the mother predominates. Boys as well as girls have more contact with the mother than



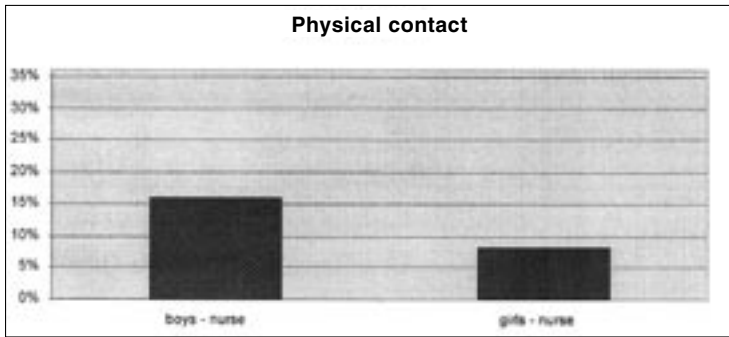
Graph 16



Graph 17



Graph 18



Graph 19

with the nursery nurse and girls have more physical contact with their mother than do the boys. The boys show more physical contact with the nurse than do the girls. This is in contrast with the previous ability of the girls to get more attention from the nursery nurse than do the boys. Probably the physical contact level is different to the communication level?

In the 'physical contact' subcategory the nursery nurses show restraint because they usually react sensitively to the child's needs – they have either no, or else only minimal, physical contact with the child.

CONCUSION

We do not want to generalise too much before the analysis of all findings is complete, however, we can say that the behaviour of mothers and nursery nurses shows certain general trends. The biggest difference that we recorded was in the amount of physical contact shown between the child and the mother, as compared to that shown between the child and the nurse, as we expected. Regarding Vocalisation and Motorics, it seems that the nursery nurses are more active. Actions falling into the subcategories of Manipulation, Visual Attention and Posture/Position occur in both the mother and the nursery nurse in similar proportion. An interesting fact is that the mothers as well as the nursery nurses show surprisingly little emotion. And this finding will be very interesting to compare with that from France when we acquire the precise results from the analysis of the behaviour of French mothers and nursery nurses.

It also seems that children of both genders react more towards their mother, while girls react more than do boys. This became evident especially in the Motorics, Vocalisation and Physical Contact subcategories. The findings were, however, different in the Visual Attention subcategory. The boys were more active in relation to the nursery nurse than were girls, and the same in the Physical Contact subcategory.

The findings of this study will be analysed further with regard to: monitoring of speech, the level of motor development, monitoring of emotional development, the level of motor activity, mothers' relations to the child versus nursery nurses' relations to the child.

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ADOLESCENTS' ASSESSMENTS OF PARENTS AND PEERS: RELATIONSHIPS TO SELF-ESTEEM AND SELF-EFFICACY¹

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ABSTRACT

The study investigates how perceived parent and peer/friend relationships influence two aspects of global self-evaluation, self-esteem and self-efficacy, during middle adolescence. The growing influence of friends/peers on self-evaluation was expected, especially on self-efficacy. We also expected a stable parent influence on self-esteem. Also, sex and age differences were assumed. As results reveal, perceived relationships to parents and perceived relationships to friends/peers are two consistent blocks of predictors of self-esteem and self-efficacy. Both aspects of global self-evaluation are higher in older adolescents than in younger ones. Regarding self-esteem, parent

variables (warmth and trust) are more influential predictors. Peer/friend variables and age have stronger influence on girls' self-esteem than on boys'. Regarding self-efficacy, the block of friend/peer variables explains more variance than the block of parent variables. Especially, global comparison with peers is strongly influential, especially in girls. Boys' self-efficacy is also related to the perceived warmth of father.

Key words:

self-esteem,
self-efficacy,
adolescence,
relationships with peers and parents

INTRODUCTION

In terms of a metaphor used by Hartup (1989), the social world of children and adolescents is represented by a set of vertical and horizontal relationships. Vertical relationships form between individuals of different abilities and status. In this respect parents have greater knowledge and power than children and assume a controlling role to which children are expected to defer. Horizontal relationships represent interactions with peers where all the participants have comparable social power, roles, and competence. Parent and peer relationships serve different functions in adolescent development but their origins and functions are closely intertwined (e.g. Hartup, 1989; Petersen, Silbereisen and Sorensen, 1992; Durkin, 1995; Meeus and Deković, 1995).

Traditionally, parents are supposed to be more influential than peers, the school, and media during early adolescence. During middle and late adolescence parents play a less central role in the cognitive and self-concept development and identity formation. However, due to different agents having different functions and meanings at different times and situations, it is very difficult to quantify and compare the influence of various socialization agents. The generally accepted opinion that the importance of parents decreases during adolescence and the importance of peers increases is now being revised. Studies of the adolescents' family and peer relationships show that these two types of relationships are not an „either/or“ phenomenon (Durkin, 1995; Macek and Štefánková, 2006). It is the basic characteristics of relationships between parents and children that changes during adolescence (Youniss and Smollar, 1985). Adolescents act more and more often as equal partners in communication with their parents. Parents have more chances to assume the symmetrical roles of friends instead of the role of authority. Grotevand and Cooper (1985) suggested that a good bond between adolescents and their parents and appropriate self-assertion could establish a positive balance and strengthen the adolescent self.

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Compared to the life experience of a child, the adolescent peer context is more differentiated too. The meaning and importance of close friendship is growing along with peer conformity and peer pressure. If friendship is mainly defined in terms of reciprocity and mutuality, peer relationships and peer groups are defined in terms of unilateral assessments of relative standing and reputation (Hartup and Stevens, 1997). However, both types of horizontal relationships influence each other. Both form during adolescence on the basis of interpersonal attractiveness, physical attributes, and achievement. Being involved in various peer groups is an important basis for the development of close friendships (Heaven, 1994). As Seltzer (1989) wrote, the question that is still open is whether „true friendships“ can exist in adolescence because the boundaries of personal and social identity are not yet clear – relationships with peers (age-mates) are not the same as friendships at other times of the life span. As adolescents undergo the emotional, cognitive, and social development, the nature and quality of friendship change too. Self-development and identity formation are the main developmental tasks of adolescence and friendship and peer relationships should be considered in this context (Erikson, 1968; Heaven, 1994).

Meeus' and his colleagues' study of the developmental changes of the influence of parents and peers also shows that if parental support is stronger than peer support in early adolescence then the level of both is very similar in middle and late adolescence. They show as well that parental support has stronger causal effects on the general well-being and school performance of adolescents. Parental support and peer support are presented as related forms of support (Meeus, Helsen, and Volleberg, 1995; Meeus and Deković, 1995).

Our cross-sectional research (including seven age cohorts from 11 to 17 years) that focused on the changes in the role of parents and peers during adolescence brings similar results. Parents' influence is slowly decreasing and peers' influence is increasing during early and middle adolescence. Although the influence of friends is strongly growing in domains of school problems and future occupation, parents remain more important as advisers than peers (Macek, Osecká, 1999).

Research results also suggest that the quality of parent relationships influences peer relationships and support, especially in early adolescence (Širůček and Širůčková, 2006). If children trust their parents they do not prefer extreme forms of peer orientation. If they perceive too few opportunities from their parents to be involved in decision-making, as well as no increase in these opportunities, they are higher in extreme peer orientation and peer advice seeking (Fulgini and Eccles, 1993). Family life characterized by conflict and lack of support for early adolescent development is related to the increased involvement with peer groups and more conformity to peer pressure (Shulman et al., 1995). During middle and late adolescence, parental and peer (friend) support seem to be relatively independent support systems. If there are some relationships, they are rather positive than the opposite: high parental support is connected with positive friend support and low parental support is connected with negative effect of friend support (Helsen, Vollebergh and Meeus, 2000).

Both types of adolescent relationships are closely related to self and identity development. There is much evidence about the roles of parents, peers, and friends as important „significant others“ in the process of adolescent self-definition and self-evaluation (Dusek and Flaherty, 1981; Markus and Nurius, 1986; Damon and Hart, 1988; Nurmi and Pulliainen, 1991; Oosterwegel, 1992; Harter, 1993). According to Meeus (1992), there is no aspect of identity development during middle and late adolescence that is not primarily influenced by peers. On the other hand, parents very often have additional influence and the „final word“ in many domains of adolescent everyday life.

Also our former research on self and identity development confirmed the meaning of parents as „significant others“ in the process of adolescent self-definition and self-evaluation. Despite the fact that the importance of the self according to parents (self-presentation: „How I think my mother/father sees me“) decreased with age and that the importance of the self according to peers increased with age, the general importance of the self according to parents remained highest of all the other possible self-representations (Macek and Osecká, 1996; Macek, 1997).

It is evident that the adolescent self-evaluation and perceptions and evaluations of peers and parents are mutually dependent. However, we can consider some further specifications of this relationship. If parental warmth and support forms a base for adolescent global self-esteem, then the peer arena and friend relationships represent a space for testing and confirming social and personal competency (Seltzer, 1989) and self-efficacy (Land, 1998). General self-efficacy and global self-esteem are conceptualized as two aspects of general self-evaluations (Judge et al., 1997). As many authors have mentioned, an important difference between global self-esteem and general self-efficacy is that self-efficacy captures more of a motivational belief (or a judg-

ment) regarding task capabilities, whereas self-esteem captures more of an affective evaluation of (or feeling regarding) the self (Betz and Klein, 1996; Brockner, 1988; Chen et al., 2001; Gardner and Pierce, 1998).

The aim of this study is to investigate how the perceived parent and peer/friend relationships bear on global self-esteem and generalized self-efficacy (GSE) during middle adolescence. The following gender differences are expected: deeper anchoring of girls' self-esteem and self-efficacy in close relationships with parents and friends, stronger influence of peer comparison and acceptance on boys' self-esteem and self-efficacy (Macek, 1997; Macek and Osecká, 1999; Macek et al, 1999). With respect to the different roles of parents and peers during adolescence we also hypothesize that self-esteem is more based on parental warmth and support from family (especially for younger adolescents), while generalized self-efficacy, representing a feeling of personal competency, is closely related to perceived peer support and evaluation (especially for older adolescents).

METHOD

Participants

The sample (N = 710) used in this study consists of the participants from the Moravia Longitudinal Youth Study (Macek et al., 2002). However, the results presented in this paper are based on cross-sectional data. The sample includes two cohorts. The younger one includes adolescents born from 1986 to 1987 (age 12.5 to 14 at the time of data collection), the older one includes adolescents born from 1983 to 1984 (age 16.5 to 18). The sample includes more girls (n=424) than boys (n=286) but this is not an issue because the genders are treated separately in the analyses and the proportion of younger to older children is the same within both gender subgroups.

All participants come from the South Moravia region of the Czech Republic. They were randomly selected according to the type of attended school. About one fourth of the younger cohort attends high-track grammar schools (Gymnasium), the rest attends various basic schools. The composition of the older cohort reflects the three types of secondary education in Czech Republic – one third of this sample attends vocational schools, one third attends specialized schools leading to secondary school certificate and the last third attends grammar schools (Gymnasium).

Procedure

Given the age of our participants, we sought permission from the participating schools, the relevant school district authority, and the parents. Data were collected using self-report questionnaires administered to adolescents in classroom-size groups (about 20 to 30 respondents) during two class periods. Respondents completed the questionnaires without the presence of their teachers.

The questionnaires consisted of a number of self-assessment scales and items from various domains: family relationships, peer and friend relationships, attitudes to school environment, risk-taking behavior.

Measures

In the present investigation we are interested in the measures of adolescents' perceptions and evaluations of their parents, friends, peers, and self.

Self-esteem was measured by using 8 items taken from several sources (Rosenberg, 1979; Kracke and Held, 1994; Schwarzer, 1986). Four positive and four negative statements (e.g. „I do not think I am any worse than anybody else“, „I often feel useless“, „I think I am all right“) were assessed on a 4-point scale ranging from 1 (totally disagree) to 4 (totally agree). The Cronbach alpha reliability estimate for this scale was .82.

Self-efficacy was measured by 3 items („Whatever happens, I can manage it“, „Even when bigger problems arise unexpectedly I do not have trouble finding a solution“, „When I find myself in a difficult situation I usually know what to do“) (Kracke and Held, 1994; Jerusalem and Schwarzer, 1986). The participants marked their agreement with individual items on a 4-point scale from 1 (totally disagree) to 4 (totally agree). The Cronbach alpha reliability estimate for this scale was .73.

Warmth of Mother and Warmth of Father are two 11-item scales adapted from a similar inventory of parental warmth and acceptance (Greenberger and Chen, 1996). The participants marked their agreement with the statements (e.g. „My mother (father) really understands me“) on a 4-

point scale ranging from 1 (totally disagree) to 4 (totally agree). The Cronbach alpha reliability estimate for the Warmth of Mother scale was .83 and for the Warmth of Father scale was .87.

The Parental Monitoring Scale is based on an instrument by Greenberger and Chen (Chen et al., 1998). Nine items represent questions on parental knowledge of various aspects of adolescents' lives such as „Do your parents know who you spend your time out with?“ The scale values ranged from 1 (never) to 4 (always). The Cronbach alpha reliability estimate for this scale was .82.

Trust in Parents and Friends are translated versions of two scales used in a German project on adolescent development during the time of social change (Kracke and Held, 1994; Noack and Kracke, 1997). Trust in parents and Trust in friends were measured separately. The participants marked their agreement with six items like „I can be myself when I am with my parents (friends)“ on a 4-point scale ranging from 1 (totally disagree) to 4 (totally agree). The Cronbach alpha reliability for the Trust in Parents scale was .70 and for the Trust in Friends scale it was .68.

Global Comparison with Peers was measured by a 6-item scale specially constructed for the present study. The participants were asked to compare themselves with their peers on various aspects which are important in adolescent social life (e.g. „Regarding my popularity (level of knowledge, abilities, appearance etc.), am I better or worse than most of my peers?“). The responses on a five-point scale ranged from much worse (1) to much better (5). The Cronbach alpha reliability for this scale was .61.

On the basis of principal component analysis of the set of items related to personal importance of friends, two summation scales were constructed. The Esteem from Friends (7 items) expresses the participant's personal experience of how much friends respect him/her (e.g. „I think my friends can see my good character traits“). The Cronbach alpha reliability estimate for this scale was .74. The second scale is called Friend involvement in dealing with problems (4 items). It is based on an assessment of the amount of involvement of friends in the participant's problems in private life, at school, or in family (e.g. „When I have personal problems I ask my friends for help“). The Cronbach alpha reliability for this scale was .82. Items of both scales were ranging on a 4-point scale from totally disagree (1) to totally agree (4).

For an aggregate analysis we constructed two additional variables: Relationship with Parents and Relationship with Peers/Friends. The variables were computed separately for boys and girls. The former one is a variable formed by summing the four parental scales (in standardized scores). The Cronbach alpha reliability estimate for the Relationship with Parents scale was .84 for boys and .84 for girls. The latter one is a variable formed by summing the four peer/friend scales (in standardized scores). The Cronbach alpha reliability estimate for the Relationship with Peers/Friends scale was .60 for boys and .62 for girls.

RESULTS

First, we present the descriptive characteristics for all variables used in this paper, including gender differences. Second, we show the correlations between the variables, followed by the results of the regression analyses. All analyses are presented separately for boys and girls.

Descriptives, effects of sex and cohort

Means and standard deviations of all variables broken down by sex and are reported in Table 1.

No significant sex differences were found in the level of self-esteem, warmth of father, trust in parents, and global comparison of adolescents with peers.

Boys show significantly higher level of self-efficacy than girls do. Although there is no significant difference between boys and girls in the Warmth of father mean score, the variance of girls' scores is significantly larger than the variance of boys' scores ($p < .01$). Girls report higher warmth of mother and higher levels of monitoring from their parents. Also the remaining friend-related assessments are significantly higher for girls than for boys: trust in friends, esteem from friends, and friend involvement in dealing with problems.

Because the cohort (age) variable is not included in the regression analyses we wanted to be reasonably sure that any effects that we might find are not caused by cohort membership. To eliminate possible direct cohort effects the proportion of cohorts should be the same in both gender subgroups. This condition can be considered met as in the boys group 57% were from the younger cohort and in the girls group it was 55% ($\chi^2 = .44$, $df = 1$, $p > .05$). Also there should not be any age*cohort interaction effects on the variables under study. The last column in Table 1 reports the significances of age*cohort interaction effects. Only for self-efficacy there is a

Table 1 Means and One-Way Analyses of Variance for Effects of Gender on Variables Used in the Study

Variable	boys		girls		mean difference	age*cohort interaction
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Self-esteem	3.07	.46	3.07	.47		
Self-efficacy	2.84	.49	2.68	.54	*	*
Warmth of Mother	3.13	.44	3.30	.46	**	
Warmth of Father	3.12	.47	3.04	.63		
Parent Monitoring	2.72	.56	2.85	.58	**	
Trust in parents	2.80	.53	2.87	.57	*	
Esteem from Friends	3.09	.44	3.24	.41	**	
Friend involvement	2.68	.70	3.11	.62	**	
Trust in Peers	2.54	.46	2.81	.48	**	
Comparison with Peers	3.25	.48	3.19	.43		

p* < .05, *p* < .01

significant interaction effect but it is very slight (partial $\eta^2 = .009$; boys have the same self-efficacy in both cohorts while girls' self-efficacy is slightly lower in the younger cohort). Thus, we consider it safe to disregard the cohort variable in the following regression analyses.

Correlations between predictor variables

Table 2 presents correlations between the four parent-related variables and the four friend-and-peer-related variables. A very consistent pattern of significant interrelations is evident among parent characteristics. As expected, perceived intensities of mother and father warmth are mutually positively dependent and they are also strongly positively related to the adolescent's trust in parents. No strong sex differences are evident in this pattern of correlations. The high internal consistency estimates for the Relationship with Parents aggregate scale reflect the high level of intercorrelation among the parent-related variables.

The variables describing adolescents' perception and evaluation of their friends and peers constitute a relatively clear cluster, too. All correlations are positive and most of them are significant. However, compared to the similar pattern of parent variables, this group of variables is not as tightly related.

Global comparison with peers does not reveal any significant correlations with variables representing specific roles and meaning of adolescents' friends. Specifically, a feeling derived from comparison „I am better/worse than most of others“ is relatively independent on the adolescent's trust in friends, the esteem perceived from friends, as well as receiving help from friends.

Table 2 Intercorrelations Between Predictors Used in Regression Analyses (boys above, girls under diagonal)

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Warmth of Mother		.57**	.54**	.51**	.16*	.07	.04	.08
2. Warmth of Father	.50**		.53**	.50**	.13	.12	-.01	.10
3. Parent Monitoring	.58**	.50**		.69**	.12	.07	-.05	.02
4. Trust in Parents	.60**	.55**	.70**		.11	.09	-.03	.03
5. Esteem from Friends	.16**	.25**	.07	..00		.44**	.10	.37**
6. Friend Involvement	.04	.20**	.03	-.05	.60**		.32**	.33**
7. Trust in Peers	-.11*	-.03	-.10*	-.13**	.22**	.30**		.07
8. Comparison with Peers	.11*	.15**	.00	.02	.38**	.18**	.09	

p* < .05, *p* < .01

Mutual relationships among the three friend-related variables are stronger for girls than for boys. Specifically, when adolescents feel high trust in friends they often report receiving help from friends and they also feel the high esteem from them. All correlations are significant with one exception: boys do not show significant connection between esteem from friends and trust in friends.

When we look at the relationships between the parent and peer characteristics, sex differences are evident. Concerning boys, only one significant correlation (at the 5% level) is revealed: perceived warmth of mother is positively related to esteem from friends. Concerning girls, one half of all the correlations are significant. However, we do not see any clear pattern. While trust in friends correlates negatively with most of the parent-related characteristics (trust in parents, warmth of mother, and parent monitoring), esteem from friends and global comparison with peers are related positively with the warmth of both parents.

Parent- and peer-relationship variables as predictors of self-esteem and self-efficacy

To examine how the adolescents' parent-related and peer-related assessments associate with the level of their global self-evaluations, multiple regression analyses using the hierarchical method were performed. The constructs of self-esteem and self-efficacy were used separately as the dependent variables. Predictor variables were entered in two steps: parent variables as indicators of the long-term influencing factors on adolescent self-development in Step 1 and friend and peer variables representing the important current factors influencing everyday adolescent self-perceptions and self-evaluations in Step 2. Regressions were conducted separately for boys and girls.

First, we present the prediction of self-esteem. Table 3 displays the standardized regression coefficients (Beta), explained variance (R²), increases of R² in each step and the total adjusted R².

With the entry of parent-related variables in Step 1, there are substantial and significant increments in the amount of variance explained for both sexes. This shows that adolescents with higher reported feelings of warmth of both parents tend to also report higher self-esteem.

Patterns of significant predictors are similar for both sexes. However, parent-related variables increase the amount of explained variance in self-esteem more in boys than in girls (increases in R² are .171 and .118 respectively). Especially the variables of parent warmth differ with sex: warmth of father is the strongest predictor in boys, warmth of mother similarly in girls.

When friend-and-peer-related variables were entered in Step 2, predicted variance in self-esteem increased significantly for both sexes (by 9 percent points in boys and 10 in girls). Relevant final patterns of significant predictors further enhanced the differences between the sexes. For boys,

Table 3 Summary of Hierarchical Regression Analyses for Variables Predicting Self-esteem

Variable	boys (N=286)		girls (N=424)	
	β		β	
	Step 1	Step 2	Step 1	Step 2
Warmth of Mother	.157	.133	.215**	.163*
Warmth of Father	.241**	.213**	.110	.035
Parent Monitoring	.140	.142	-.070	-.044
Trust in parents	-.062	-.072	.134	.189*
Esteem from Friends		.196**		.186**
Friend involvement		.132		-.104
Trust in Peers		.007		.078
Comparison with Peers		.060		.227**
Increase in R ²	.171**	.094**	.118**	.101**
Total R ²	.171	.266	.118	.219
Adjusted R ²	.154	.235	.106	.197

*p < .05, **p < .01

Table 4 Summary of Hierarchical Regression Analyses for Variables Predicting Self-efficacy

Variable	boys (N=286)		girls (N=424)	
	β		β	
	Step 1	Step 2	Step 1	Step 2
Warmth of Mother	-.055	-.094	.092	.049
Warmth of Father	.236**	.214*	.048	-.015
Parent Monitoring	.029	.062	-.107	-.067
Trust in parents	.037	.035	.136	.176*
Esteem from Friends		.069		.061
Friend involvement		.005		-.091
Trust in Peers		.180*		.135*
Comparison with Peers		.205**		.327**
Increase in R ²	.060*	.097**	.031	.134**
Total R ²	.060	.157	.031	.165
Adjusted R ²	.041	.121	.018	.142

*p < .05, **p < .01

only two predictors significantly contribute to the 27% of the total explained variance in self-esteem. Warmth of Father keeps its importance from Step 1 and in Step 2 it is joined by Esteem from Friends. It may be concluded that the boys' self-esteem grows with perceived warmth of father and with the growing esteem or respect that the adolescent perceives from his friends.

For girls, all the included predictors explain 22% of variance. Four predictors turned up significant: Warmth of Mother, Trust in Parents, Esteem from Friends, Global Comparison with Peers. The influence of trust in parents rose in the final model to the level of statistical significance. Esteem from friends and Global comparison showed as new significant predictors. All these predictors have a positive relationship with self-esteem.

The results of hierarchical regression for the self-efficacy are presented in Table 4.

In Step 1, parent-related variables explained significant portion of variance only for boys. For both sexes, the amount of variance in self-efficacy explained by parent-related variables was quite small – 6 percent for boys and 3 percent for girls.

Step 2, in which the friend and peer variables were entered, brought a significant increase in explained variance of self-efficacy in both sexes. The final patterns of significant predictors reveal some sex differences. The influence of parents is very specific. While the perceived warmth of father is positively related to boys' self-efficacy, the standardized beta coefficient for warmth of mother is not significant. Concerning the block of friend and peer variables, general comparison with peers and trust to friends are significant predictors.

Girls' level of self-efficacy grows with the trust in their parents and with positive feelings received from their peers – whether in the form of the feeling of acceptance or in the form of comparisons with peers.

Our aim is to compare the predictive power of parent-related and friend/peer-related variables. A problem can be seen in the fact that the correlations among parent-related variables in our sample are higher than the correlations among friend/peer-related variables. A lower level of multicollinearity among friend/peer-related variables gives them a chance to explain more variance in the dependent variable. One way to deal with this problem, though not perfect, is to aggregate the four variables for each source of influence (parents vs. friends/peers) into one composite variable. Thus, we will have one score representing each adolescent's relationship with his or her parents (Relationship with Parents) and one score representing his or her relationship with friends/peers (Relationship with Friends/Peers).

Tables 5 and 6 present the regressions done in the same manner as those presented above with the difference that only two predictor variables were used: Relationship with Parents and Relationship with Friends/Peers. Table 5 presents the results of the 2-step regression of these two variables on self-esteem and Table 6 presents their regression on self-efficacy.

The expected pattern of regression weights and explained variance did not show up in terms of statistical significance. Both aggregate variables are significant predictors of both self-es-

Table 5 Summary of Hierarchical Regression Analyses for Aggregated Variables Predicting Self-esteem

Variable	boys (N=286)		girls (N=424)	
	β		β	
	Step 1	Step 2	Step 1	Step 2
Relationship with parents	.38**	.35**	.32**	.30**
Relationship with peers/friends		.28**		.23**
Increase in R ²	.14**	.08**	.10**	.05**
Total R ²	.14	.22	.10	.15
Adjusted R ²	.14	.21	.10	.15

*p < .05, **p < .01

Table 6 Summary of Hierarchical Regression Analyses for Aggregated Variables Predicting Self-efficacy

Variable	boys (N=286)		girls (N=424)	
	β		β	
	Step 1	Step 2	Step 1	Step 2
Relationship with parents	.19**	.16*	.14*	.13*
Relationship with peers/friends		.29**		.26**
Increase in R ²	.04**	.08**	.02*	.06**
Total R ²	.04	.12	.02	.08
Adjusted R ²	.04	.12	.02	.07

*p < .05, **p < .01

teem and self-efficacy. Boys and girls do not differ in this pattern. However when we inspect the magnitudes of regression weights we can see that Relationship with Parents might explain self-esteem slightly better and Relationship with Friends/Peers might seem a better predictor of self-efficacy.

DISCUSSION

According to the aims of this study, relationships to parents and to friends/peers were conceptualized as two relatively independent domains of adolescents' perceptions and evaluations. In general, the empirical results indicate high consistency within the block of parent variables (for both sexes) and also relatively good consistency in the block of friend variables (especially among girls). Interrelations between the two blocks are less clear. Boys' assessments of parents are not related to their assessments of friends. Regarding girls, the assessments of parents and the assessments of friends and peers are more mutually dependent. The comparison of younger and older adolescents confirms the typical trend: the intensity of relationships to parents is rather decreasing while the intensity of friend relationships is growing. Consistently with other findings (Meeus and Deković, 1995; Macek and Osecká, 1999) it must be noted that although the intensity of parent relationships is decreasing their meaning remains positive.

The adolescents' global self-evaluation was represented by two components – self-esteem and self-efficacy. Both these characteristics were found higher in older adolescents, without sex differences. In absolute numbers adolescents report more self-esteem than self-efficacy while self-efficacy grows more with age.

Self-esteem expresses an evaluative component of self-system; a self-reflective attitude that is a product of viewing the self as an object of evaluation (Campbell, Lavelle, 1993). During middle adolescence, this aspect of self-evaluation is closely related to an experience of emotional autonomy and authenticity. To find „one's own true self“ means high self-esteem, and parental

and peer support improves these feelings. For that reason it was assumed that especially the perceived parent acceptance (warmth, trust) will predict these feelings; more than perceived support from friends and peers comparison.

This assumption seems to be supported by the explained variance increments – for boys parent variables explain three times more self-esteem variance than peer variables, for girls it is twice as much – peers seem to have slightly more influence on girls' self-esteem.

The relation of self-esteem to the assessment of the warmth of the parent of the same sex showed to be surprisingly strong. We expected this to happen for girls as previous studies suggested that the importance of father decreases with age while the importance of mother remains stable (Macek, 1997). For boys, father is always the key determinant but mother also stays important. The trust in parents is also an important predictor. The influence of peers and friends is stronger on girls. It is based on the trust in peers (while trust in parents is not so important anymore) and for girls also on the interpersonal comparisons with female peers. This shows a stronger tie to interpersonal evaluation. For boys this is more about feelings.

Perceived global self-efficacy represents competency as an important aspect of adolescent global self-evaluation (Harter, 1985). It is related to control beliefs (Flammer, 1995) and social skills of adolescents (Schwarzer, 1993). Adolescents with greater self-efficacy show higher quality of close friendship, and their friendships tend to increase in quality during middle and late adolescence (Land, 1998). We assumed that the perceived peer and friend relationships would be the stronger predictors here. As the results show, the strongest predictor of self-efficacy is the comparison with peers, the perception of parents is much weaker. Here, too, substantial sex differences can be seen.

When boys report high level of self-efficacy they usually feel the warmth from their father, have trust in their friends, and see themselves rather better in comparison to their peers. On the other side, low self-efficacy is connected with opposite characteristics (negative self-evaluations as a product of interpersonal comparison, low perceived warmth from father, and low experienced trust in friends).

With regard to girls, the pattern of predictors is different. The by far strongest predictor of level of self-efficacy is social comparison with peers. Mother and father do not seem to have any influence, only general trust to parents and age are still significant predictors.

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ON PERSONALITY STABILITY AND CHANGE: MAIN RESULTS OF BRNO LONGITUDINAL STUDY ON LIFE-SPAN DEVELOPMENT

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ABSTRACT

This paper gives an overview of the main results of the Brno Longitudinal Study on Life-span Development. This builds upon the longitudinal study of children carried in the Institute of Psychology at Brno in the sixties and seventies. The paper starts with information about the original project and how we have searched for participants and built on current sample from the original cohort.

Results from three studies concerning per-

sonality stability and change are presented. First of them deals with the prediction of adult personality from behaviors observed in the nursing and toddler stages, the second with stability and change of personality in adolescence and the third with subjective perception of personal change in life-long perspective.

Key words:

life-span development,
personality stability and change,
longitudinal study

INTRODUCTION

The psychological research has not systematically dealt with the issue of personality development in adulthood for a relatively long time. Although the number of outstanding theorists formulated their concept of development in adulthood – including its periodization and psychological characterization of individual stages (C. G. Jung, E. H. Erikson, R. Havighurst) – still in 1983 Josef Langmeier said in his *Developmental Psychology* that the psychology of adulthood and old age was much less elaborate than the psychology of childhood and adolescence. He stated there was a small number of empirical studies which dealt with development in adulthood.

This flaw was sufficiently removed during the 1980s and 90s. Developmental psychology of adults established itself as an independent psychological discipline (Demick, Andreoletti, 2003; Lemme, 1999), Canonical (normative) life course of an adult (also regarding the gender) was described in terms of both transitions (changes in state or role) and goals or/and tasks (Settersten, 2003; Wapner, Demick, 2003). The wider theoretic and methodological frameworks (often on the inter-disciplinary base) were formulated for the research of human development. Among them are mainly the theory of life course (Elder et al., 2003; Giele, Elder, 1998), lifespan psychology (Baltes 1997/2003), holistic interactionism (Magnusson, 1999), holistic, developmental, systems-oriented perspective (Wapner, Demick, 2003), and developmental systems theory (Ford, Lerner, 1992; Lerner, 2002).

The key issue of development in adulthood remains the longitudinal stability of personality and conditions of its changes. It is generally accepted that personality is a multifaced construct that must be examined through numerous and diverse methods. Personality as the system of stable components – traits (e.g. personality dispositions both inborn or gained during the early stages of development) and personality as self which is formed in the social context (stable system of self-perceptions and concepts of other people and world as whole) belong to basic conceptualizations of personality (Helson, 1996; Cloninger, 2003). While the high stability is found namely in traits, the area which is more vulnerable to changes is a socially anchored part of personality (self, character) – interpersonal characteristics, attitudes, values, etc.

This paper gives an overview of the main results of the Brno Longitudinal Study on Life-span

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Development. The paper starts with information about the original project and how we have searched for participants and built on the current sample from the original cohort. In the second part, results from three studies concerning personality stability and change are presented.

BRNO RESEARCH PROJECT ON HUMAN LIFE-SPAN DEVELOPMENT

The past: “The psychological development of school children coming from different social environments” (1961 – 1980)

The original longitudinal study titled “The psychological development of school children coming from different social environments” was presented by The Institute of Psychology of the Academy of Sciences of the Czech Republic between 1961 and 1980. The original methodology was based on the recommendations of the international organization “Centre International de l’Enfance”, residing in Paris from 1952, whose aim was to monitor somatic and psychological development of children in the long term. The methodology was used also by other centers established e.g. in London, Zurich, Geneva, Stockholm, Oslo and Brussels. Within the former Czechoslovakia, Prague (1956-86) and Brno (1961-80) centers participated in the research in Czech Republic, and Bratislava and Košice in Slovakia. The Brno sample consisted of 557 children born between 1961 and 1964; the gender distribution was even (50.1% of girls). The sample was designed to represent the general population. The first diagnostic session took place at age 6 months. Follow-ups have been carried out at ages 9, 12, 18, 24, 30, and 36 months. After 36 months, the sessions were carried out once a year (from 4 to 18 years of age of participants). Children were tested on their birthday, or as close to this date as possible.

The present: „Stability, variability and prediction of mental characteristics in adulthood: taking up the longitudinal research of children“ (2000 – 2004)

Goals of the project

The main goal of the project was to find the participants in the children’s mental development research and solicit their renewed cooperation. In a letter we sent to the former collaborators, we asked them to meet us at least once. In the end, all of the people that visited us at the institute also agreed to continue with further cooperation.

At a scientific level, the project was aimed at:

- 1) personality stability and changes in a long-term perspective,
- 2) subjective perception of one’s own person’s changes, as compared to objective data,
- 3) predictive value of personality and behavioral characteristics from childhood and adolescence in order to predict psychological characteristics in adulthood.

In the course of the project, the research part was expanded to re-analyse the former data. We took this measure especially because at the time of children’s longitudinal research, advanced statistical methods were not available, and these methods permitted analysis leading to new original results. Beside the scientific goals, it was our purpose to ensure the conservation of the original data by converting it to an electronic version.

Sample

With the request to find out the current addresses of the children’s longitudinal research participants, we appealed in May 2000 to the Czech Republic Police Force (hereafter „CR Police Force“). However, changes in the law had been made in the course of carrying out the commission, and administrative files were transferred from the CR Police Force to the Brno Municipal Council and pursuant to the new law (no. 133/2000) it became possible in 2000-6-1 to provide the information system data exclusively to authorized subjects, not to the Institute of Psychology of the Academy of Sciences of the Czech Republic (hereafter „The Institute of Psychology of the ASCR“). Therefore, until the abovementioned date, out of total number of 557 participants, the Police Force were only able to locate 245 addresses.

We asked all of these 245 people (136 men and 109 women) to co-operate in the follow-up study focused on life-span human development. Our request letter was answered by 107 persons: 103 persons agreed to participate (39 men and 64 women), whereas 3 women and 1 man declined to co-operate. We contacted the people who reacted positively to our request by phone. The meeting in the Institute of Psychology was attended by 56 persons (34 women and 22 men) at our work place. Out of these 56 people, 25 held a university degree at the time of survey, 23 were high school graduates and 8 went to an apprentice-training centre. 41 people were living in their first marriage, 5 were single, 6 divor-

ced, 3 were married again after a divorce, 1 subject got married again after having been widowed; 6 people were childless, 13 had 1 child, 27 had two children, 9 had three children and 1 informant had 5 children (i.e. an average of 1.77).

Analysis of differences between people who agreed to co-operate and those who did not answer our letter did not show any differences in psychological characteristics between these two groups (Blatný, Jelinek, Osecká, 2001; Blatný et al., 2005). The only difference found, was the time spent participating in the original longitudinal research – the people agreeing to cooperate spent a longer period of time in the original research; this fact could have been the cause of a stronger motivation to continue while adult.

However, we found differences concerning psychological variables between people who agreed to participate and people who actually did participate in the research. As regards the people who visited the Institute for real, a slightly higher level of intelligence was ascertained during their childhood and adolescence, than was the case with people who didn't come to the survey, despite their initial agreement.

These findings correspond to the fact that there is a larger participations of university graduates (45 %) in the sample than is typical for this age group in the general population in the Czech Republic, where the university graduates are represented only by 14 % (Czech Statistical Office, 2007).

Instruments

Owing to a relatively low number of subjects, we decided to use more extensively the qualitative methodology; thus, the project has a quantitative and a qualitative part.

In the quantitative part of the project, we tackled questions of long-term stability and changes in personality and predictive values of childhood and adolescence characteristics for predicting psychological characteristics in adulthood. For the purpose of observing personality stability and changes, questionnaires and self-report scales were replicated, i.e. their version for adults: Eysenck Personality Inventory (Eysenck & Eysenck, 1964; Czech version Vonkomer and Miglierini, 1979), Wechsler's Intelligence Test WAIS-III (Wechsler, 1999), Rokeach's Test of Values (Rokeach, 1973) and 15 self-report scales from the Semantical differential of different terms (next to the term I for instance mother, soldier, tractor). In predicting the psychological characteristics in adulthood, we targeted a larger complex of personality traits in the framework of a five-factor personality model, self-concept variables (self-esteem, self-concept clarity, self-efficacy, 53 self-report scales beyond the fifteen replicated), and life satisfaction. We used Czech versions of following the questionnaires and scales: NEO-FFI (Costa and McCrae, 1992; Czech version Hrebickova and Urbanek, 2001), Rosenberg's self-Esteem Scale (Rosenberg, 1965), Self-Concept Clarity Scale (Campbell et al., 1996), General Self-Efficacy Scale (Křivohlavý, Schwarzer, Jerusalem, 1993) Satisfaction With Life Scale (Pavot and Diener, 1993).

In the qualitative part of the research, we were concerned especially with questions of treatment and organization of life experience, evaluation of one's own life, comparison of the childhood and adolescence ideas about life with the current real situation and subjective perception of the change of one's own self. As a technique, we chose an interview focused on lifeline concept. The approach is inspired by the lifeline technique of Jiří Tyl (Tyl, 1986; also Řičan and Ženatý, 1988), completed by principles conducting a narrative interview according to McAdams (1993). In Tyl's conception, the lifeline serves the primary purpose of a projective diagnostic technique; in our research, we used it as a means of structuring the narration about life; in a partial interpretation however, the projective component of the lifeline was also used – i.e. its shape (Čermák, 2004).

The future: „The integration of life experience in adulthood: Emotional dispositions, personal history, and life perspectives“

At present, the second phase of longitudinal research in adulthood, which is concerned with the theme of personal coherence, is under way. In this phase, we also target other goals beyond the scientific issues. Above all, we continue efforts in order to find other participants in the original longitudinal study. A second important goal is to develop a closer cooperation with the Prague research group lead by Miluše Havlínová.

MAIN RESULTS

In the next part of the paper, results from three studies concerning personality stability and change are presented. The first deals with the prediction of adult personality from behaviors observed in the

nursling and toddler stages, the second with stability and change of personality in adolescence, and the third with subjective perception of personal change in life-long perspective.

Relationship between child temperament and adult personality

One of the main aims of the first phase of the newly established research of lifespan human development, was the examination of the predictive value of childhood and adolescence data for predicting psychological characteristics in adulthood. One of the first studies was therefore devoted to the relationship between early child temperament and adult personality (Blatný, Jelínek, Osecká, 2006).

For the time being there is probably no research that would prove empirically a relationship between early child temperament and adult personality. Longitudinal projects, which are the only ones that could bring forward such a proof, are focused either on the development of psychological functions and personality during childhood and adolescence, or they study adult personality stability in people over 18 years of age. Studies tracking personality stability and changes over the life span development are rather rare (Costa and McCrae, 2001) and if they exist at all, they start most frequently from the age of 8 to 12 years for children (Hampson et al., 2006; Pulkkinen, 1996; Shiner, 2000; Shiner, Masten, Tellegen, 2002). In doing this, it is not proven sufficiently that the personality traits are innate and continuous over the life span.

The strongest evidence to date of the continuity of personality from childhood to adulthood was offered by Caspi and his colleagues (Caspi, 2000; Caspi et al., 1996; Caspi et al., 2003) who studied the relationship between children's behavioral styles at age 3 and their personality traits in adolescence and young adulthood. Caspi found out significant links of child temperament and adult personality traits: for example, the adult personality of children who were initially diagnosed as Undercontrolled was characterized by impulsivity, unreliability and antisocial behaviors; the inhibited children tended to be unassertive and depressive in adulthood.

Although the research of Caspi and his colleagues is the strongest evidence to date than child's behavioral styles can predict adult personality traits, it does not focus on the early developmental stages: children at age 3 has been usually influenced by the effects of socialization, environment and upbringing. The present study therefore focuses on the prediction of adult personality traits from behaviors observed before the age of 3, i.e., in the nursing and toddler stages, when real innate, temperamental dispositions are supposed to be manifested in child behavior.

The standard method of assessing child temperament was not included in the research; therefore, for the operationalization of temperament, we used the rating scales on which experimenters evaluated the child's behavior during the examination.

The set of 34 rating scales for description of child behavior was used for children from age 6 months to 10 years. The more structured the behavior of the children, the more rating scales were used. Only scales relevant for behaviour description of children of all age groups (from the age of 6 months) were used and those not relevant for children under 3 years old were excluded (e.g. self-criticality, self-confidence in performing the examination). Fourteen selected scales focused on the following aspects of behavior: Initial adaptation (difficult – easy), Emotional dependency on mother, Interest in examination, Nervousness (neuroticism), Positive emotional expressions, Negative emotional expressions, Frequency of positive social responses, Intensity of positive social responses, Frequency of negative social responses, Intensity of negative social responses, General reactivity, General activity, Aggression against things/objects, Conformity (obedience).

In the present study, we included the scales for 5 age brackets in the analysis (9, 12, 18, 24 and 30 months of age). These scales cover nursing and toddler stages of development (Langmeier, Langmeier, & Krejcirova, 1998). We did not use data from age 6 months due to a lot of missing values in some of the rating scales (e.g. Conformity). Theoretically, based selection was validated also empirically: we performed a factor analysis for each pre-school age bracket (9 months to 6 years). The analysis showed that factor structure of child behavior is almost identical in all age levels in terms of sufficient number of factors and factor loadings of individual items.

We calculated mean values for each temperamental characteristic of the period being monitored (i.e. 9 to 30 months). For each rating scale, a minimum of 4 measurements had to be performed. Data obtained in this way were analyzed by factor analysis (maximum likelihood method, direct oblimin rotation, $\delta = 0$). Effective sample size in childhood depended on age level and on concrete methods. Data about 301 children (50.7% of girls) were analyzed in the framework of factor analysis of average scores. The results are included in Table 1.

Factor analysis yielded 3 factors with eigenvalue > 1 . Identified factors were interpreted as positive affectivity (factor 1), negative affectivity (factor 2) and disinhibition vs. inhibition (factor 3). Only the

Table 1 Dimensions of child temperament: Factor analysis results (pattern matrix).

	Factor 1	Factor 2	Factor 3
Positive social responses (intensity)	.931		
Positive social responses (frequency)	.914		
Positive emotional expressions	.792		
Interest in examination	.598		
Initial adaptation (difficult – easy)	.514	-.466	
Negative social responses (intensity)		.858	
Negative social responses (frequency)		.841	
Negative emotional expressions		.824	
Nervousness (neuroticism)	-.425	.601	
Emotional dependency on mother		.544	.500
General reactivity		.478	
Aggression against things/objects			-.805
General activity	.402		-.620
Conformity (obedience)			.559

Note. Factor loadings with absolute values < 0.4 are not mentioned in the table.

third factor – inhibition – is related to child gender. During the monitoring, examiners rated boys as more disinhibited as compared with girls ($r = 0.24$; $p < 0.01$; boy coding = 0, girl coding = 1).

The obtained factor scores representing dimensions of child temperament were correlated to adult personality traits. Adult personality was measured with Eysenck Personality Inventory (Eysenck, Eysenck, 1964; Czech version Vonkomer, Miglierini, 1979) and NEO-FFI questionnaire (Costa, McCrae, 1992; Czech version Hrebickova, Urbanek, 2001). As to the self-variables we dealt with self-esteem, self-concept clarity and self-efficacy on the basis of the following scales: Rosenberg Self-Esteem Scale (Rosenberg, 1965), Self-Concept Clarity Scale (Campbell, Trapnell, Heine, Katz, Lavelle, Lehman, 1996) and General Self-Efficacy Scale (Krivohlavy, Schwarzer, Jerusalem, 1993). Table 2 presents respective Spearman's nonparametric correlation coefficients.

Child positive affectivity correlates positively with adult agreeableness measured by NEO-FFI and negatively with neuroticism measured by EPI. On the margin of statistical significance, positive affectivity correlates with extraversion measured by NEO-FFI ($p = 0.058$). Negative affectivity correlates only with neuroticism measured by EPI. Child inhibition correlates negatively with adult extraversion and conscientiousness measured by NEO-FFI and with self-efficacy. All correlations were significant at the 0.05 level.

We found expected connections between child temperament and adult personality: child positive

Table 2 Relationships between dimensions of child temperament and adult personality: Correlation analysis results

		Positive affectivity	Negative affectivity	Inhibition
EPI	Neuroticism	-.324*	.322*	.229
	Extraversion	.163	.022	-.217
NEO-FFI	Neuroticism	-.246	.125	.217
	Extraversion	.302	-.092	-.321*
	Openness to experience	.244	-.026	-.070
	Agreeableness	.356*	-.125	-.169
	Conscientiousness	.155	-.195	-.309*
SELF	Self-esteem	.291	-.057	-.179
	Self-concept clarity	.276	-.066	-.164
	Self-efficacy	.067	-.058	-.311*

* Correlation is significant at the 0.05 level.

affectivity is the basis of adult extraversion, whereas child negative affectivity is the basis of adult neuroticism; what is more, child positive affectivity predicts adult emotional stability. In addition, we proved the assumption that child positive affectivity differentiates into extraversion and agreeableness traits (Angleitner, 1991; Prior, 1992; Hagekull, 1994).

Positive affectivity shows more frequent and stronger relationships with adult variables as compared with negative affectivity. We believe this is true because of the fact that positive emotional and social responses are generally desirable and, as such, reinforced from early childhood. This finding was highlighted by Diener et al. (1999) who believed that positive emotions are – especially in Euro-American culture – “socialized”. Such an interpretation is supported also by the fact that child positive affectivity has a stronger relationship with adult agreeableness as compared with adult extraversion.

Disinhibition, the third temperamental dimension, plays an important role in prediction of adult personality too. It is predictor of extraversion, conscientiousness and generalized self-efficacy. A special relationship between child assertiveness and high adult self-efficacy provokes many theoretical and methodological questions. According to Bandura (1977, 1999), the construct of self-efficacy is based on personal experience (particularly on the mastery experience) that develops during the life span through repeating similar experiences. Our results indicate that people are primarily disposed to have qualities associated with self-efficacy. These qualities include resilience, self-determination, flexibility and feeling of control. At least we can say that innate qualities provide the appropriate matrix for formation of social cognitive components of personality.

The temperamental nature of self-efficacy is supported also by the link between child disinhibition and adult conscientiousness. Contemporary psychology defines conscientiousness both in terms of order, impulse control, and responsibility, and in terms of achievement (Roberts, Walton, Bogg, 2005). Within Five Factor Theory, conscientiousness dimension represents the relation to work, active planning, organizing and realization of tasks. People with high conscientiousness score in NEO-FFI scale described themselves as being purposeful, ambitious, diligent, tenacious, well organized, self-disciplined, reliable, accurate and orderly. Such a dimension includes a significant efficiency element and is therefore related to self-efficacy which is, in fact, the assurance of one's own ability to cope with life difficulties and challenges.

Although we proved the assumed association of child temperament with adult personality, the identified correlations (though significant) are relatively low (ranging from 0.3 to 0.4). That is to say that even though child temperament carries over to adulthood, it is nothing more than the *base* of adult personality whose formation is largely influenced by social factors (Helson et al., 2002; Roberts, Wood, Smith, 2005).

Stability and changes of personality in adolescence: Analysis at the level of personality types

Personality stability is predominantly studied in adults – the lower limit in these researches is around twenty years of age. The focus on adult population is a logical one – according to many authors, the personality is fully formed only between the 20th and 30th year of age and it is connected with the performing of social roles, especially in marriage and at work (e.g. Haan, Millsap, Hartka, 1986). Correlation coefficients found in adolescents are thus always lower than in adults (Costa and McCrae, 1997; Roberts and DelVicchio, 2000). Helson and Moane (1987) who studied personality changes of women between college and mid-adulthood, indicate the age of 27 as an important divide.

In regard to a lower number of studies concerned with personality continuity during adolescence as compared with research on adult population, we focused our attention on the period of adolescence. We were interested to see whether the lower personality stability during this period would be confirmed, compared to coefficients discovered in adults, as indicated by above mentioned survey and meta-analytical studies (Costa and McCrae, 1997; Roberts and DelVicchio, 2000).

The second goal of our research was to assess the advantages of a typological approach to longitudinal data, which lately appears to be a suitable complement to the traditional correlative approach (Blatný and Urbánek, 2004). The study is at the same time a sample of the effective use of archival data, the gathering of which is, especially in cases of longitudinal research, particularly time-consuming (James and Paul, 1993).

Personality stability is usually ascertained in the framework of separate personality traits and its level is expressed by the value of correlation coefficient. However, the problem of correlation analysis is that it uses standardized variables and this means that it does not take into account the raw values of these variables but only their deviation from group average. Naturally, this brings useful information about the rate of prevalence of subjects in the selected group that are at the same time above (or below) the average in both surveys. If the correlation is lower than one (and this is the case for all of

them in empirical data), there are nonetheless always subjects who are above average regarding one trait at a given age level, and below average at another age level (and vice-versa). This means that their relative position at an imaginary scale of the trait measured is unstable. Synchronous observation of an individual's position on the scales of several variables is enabled by some of the more advanced methods of correlation or regression analysis, e.g. analyses of canonical correlations (Cohen, Cohen, 1983), or procedures of cluster analysis.

Cluster analysis compared to the correlation analysis stems from the factual averages of items and enables the process of independent classification of informants into typological clusters acquired separately at individual age levels. The typological approach thus permits us to observe not only the stability in light of personality types to which the subject belongs, but also the transfers between different types, i.e. the orientation of ongoing changes. This procedure is known also as Configural Frequency Analysis (Von Eye, 2002). We decided to use the typological approach, not only because of some of the above-described advantages, which it can offer as compared with the classical correlation analysis, but also because the question of convenience of using particular procedures in order to assess the level of stability of certain psychological variables must always be considered in the given theory's context. In our case, the relevant theory is Eysenck's approach of temperament, which connects the dimensional and the typological approach of temperament. The basic temperamental dimensions of extraversion and neuroticism are forming two orthogonal axes, into the constellation of which the classical temperamental types can be placed according to Eysenck: a stable introvert is phlegmatic, an unstable introvert is melancholic, a stable extravert is sanguineous and an unstable extravert is choleric. For this reason, the most suitable procedure for the personality stability observation appears to be one of the cluster analysis methods, whose result would be an empirical typology.

The sample was composed of 126 subjects (59 boys and 67 girls) with data available from personality measurement both at the age of 16 and 18. The personality typology (see below), however, was created on the basis of data coming from participants on given age levels (for the age of 16: N = 333, 168 boys and 165 girls, for the age of 18: N = 158, 81 boys and 77 girls – these numbers became even slightly lower during the analysis because of the existence of missing values).

The personality was measured three times in all, and by two instruments: at the age of 16 and 18 years by the Maudsley Personality Inventory (MPI, Eysenck 1959, Czech research version), at 17 years of age by Cattell's 16 PF. For the purpose of our study, we used only the data obtained by the same method, i.e. Eysenck's MPI. We observed the stability in the framework of individual personality traits by correlation analysis. The level of personality traits' stability expressed by correlation coefficient is for the extraversion equal to 0.63 and for the neuroticism 0.71.

We created the personality typology by using a non-hierarchical method of cluster analysis (K-means cluster in software SPSS 10.0) on the MPI items. We obtained a solution for 2 to 6 types for the age of both 16 and 18 years. We decided to use four clusters since these clusters correspond relatively closely to the distribution into four temperamental types: sanguineous, phlegmatic, melancholic and choleric. Clusters denomination criterion was the average level of extraversion and of neuroticism in a given cluster. With regard to the distribution of trait introversion-extraversion, which is shifted towards the pole of extraversion, clusters of subjects were labeled as introverts although their level of introversion is close to the boundary and approaches the theoretical average of the scale (values from 23.0 to 24.3 with the scale range of 0 to 48). The results can be found in Table 3.

At the age level of 16 and 18 years the results were – except for the order in which particular clusters were identified – very similar. The only serious difference is the fact that for the eighteen year old, no cluster was identified corresponding to phlegmatic i.e. subjects characterized by a low level of both extraversion and neuroticism. On the contrary, two clusters of subjects with high extraversion and low neuroticism were identified, their only difference being the level of emotional stability. We labeled them as sanguineous 1 and sanguineous 2.

We analyzed the type stability on the basis of contingency tables and we checked statistical significance by χ^2 test. We checked whether individual subjects were included as regards analyses at both age levels into the same cluster. We created a contingency table containing the classification of subjects at the level of 16 years in lines and the classification at the level of 18 years in columns (table 3). Because of the missing data in samples of both age levels the scope of the select sample was considerably reduced – table 4 contains only subjects who were classified at both age levels.

Although the equivalence between mutually corresponding clusters is far from perfect, the relationship between lines and columns of this table is statistically significant ($\chi^2 = 70.099$, $df = 9$; $p < 0.001$): the number of subjects keeping their cluster membership is therefore statistically significant. The number of subjects who were at both age levels included into the cluster identified in the same way are highlighted in the table by bold print. In all, 64 subjects are concerned, which out of the overall number of 126 subjects in this table, corresponds to 50.8%.

Table 3 Results of cluster analysis

		Extraversion		Neuroticism		N
		m	SD	m	SD	
16 years	Sang.	34.27	4.66	10.39	5.65	113
	Phlegm.	24.33	5.19	17.22	6.27	63
	Melan.	23.40	5.78	34.39	5.72	57
	Choler.	34.03	4.22	25.26	6.07	74
	Total	30.15	7.01	19.83	6.86	307
18 years	Sang.1	30.51	6.06	9.16	4.33	57
	Sang.2	32.39	6.28	17.72	3.95	36
	Melan.	23.00	5.87	32.36	6.52	25
	Choler.	34.26	3.52	29.63	5.62	27
	Total	30.38	6.72	19.10	10.71	145

Analysis of stability at the level of personality types corresponds to the results of correlation analysis: 51% of respondents keep their belonging to the type at the age of 16 and 18 years, whereas the proportion of subjects with persistent personality to subjects for whom a change occurred, is in the test context chi square statistically significant. As regards the personality changes, for 40% of subjects they are caused by a change of level of only one personality dimension: we identified this change as „passage into related type“. For instance, phlegmatic – stable introverts – become sanguineous – stable extraverts. The change in both dimensions is a very sporadic one, it happened in only 9% of cases; we identified this change as „passage into opposite type“. Thus, out of a total number of changes, 82% happen in only one of the dimensions and only 18% happen in both dimensions at the same time.

Our findings support observations concerning high personality stability, even in the adolescence period when the personality is still taking shape. We account for the high stability by biological bases of extraversion and neuroticism that express basic personality dispositions in the domain of emotionality and overall directivity. Changes found can thus be interpreted rather as developmental changes, in which the change in adolescents’ social position is reflected: in both personality traits, changes happen predominantly towards socially desirable poles, i.e. towards extraversion and emotional stability, whereas this trend is stronger in case of extraversion. We account for this trend by social factors, be it higher need and frequency of social contacts, or self-presentation in accordance with social acceptability.

The study’s results above all bring about the question of what, from the psychological point of view, can be considered as personality „change“. Analysis of stability at the level of personality types demonstrates that only less than one fifth of changes are occurring at the same time in both of the personality dimensions observed (called passage into opposite type). The question remains whether the increase or decrease in one personality trait while the other’s level remains stable, can be considered as a “personality change”.

Subjective perception of personal change

Although we were able to prove not only continuity between child temperament and the adult personality, but also considerable personality characteristics’ stability between adolescence and mid-adulthood,

Table 4 Analysis of the type stability: contingency table

		18 years				
		S1	S2	M	Ch	Total
16 years	Sang.	29	7	2	2	40
	Phleg.	16	7	3	2	28
	Melan.	2	5	13	4	24
	Chol.	2	11	6	15	34
	Total	49	30	24	23	126

results prove from previous studies that people are changing: the highest observed correlations (around the value of 0.5) explain only one third of the variance in the first and the second measurement.

In most cases, the findings on personality stability and change come from the research that is based on nomothetical manner. It is typical that they deal with the objective measurement of change, they focus on personality traits, they use quantitative methodology (i.e. questionnaires and statistical computation), and – although they deal with longitudinal stability of personality – they do not often use longitudinal, but cross-sectional design.

However, according to critics, self-report methods are not sensitive enough to detect real changes of personality that take place in far more subtle areas than in personality traits. With our study, we want to extend the research which deals with subjective perception of change, which uses the idiographic approach (or combine nomothetical and idiographic approach), follows the whole personality, uses qualitative methodology, and has longitudinal design.

The general purpose of our study was to investigate, how people themselves perceive whether and in which way they change, or whether or to which extent they remain the same (Blatný, Osecká, 2005). With the help of a narrative interview and free telling about the change of their own person, we tried to capture what objective methods are not able to reflect: sources, circumstances, and character of the change of personality, and personal conception and interpretation of these changes (i.e. what people consider as a change and how they understand it).

We used the lifeline technique (Čermák, 2004, Tyl, 1985). Respondents were asked to draw a line representing their lives and then were invited to tell a story about their lives. The interview is semi-structured. Respondents are gradually asked to speak about important events in their lives, about people who they considered important, and about their future prospects (they may also be asked to draw important points on the line). Their last task is to draw an ideal lifeline.

During the interview, we also asked a question about the change of personality. It was as follows: „Do you have a feeling that you have changed (during your life)?“ By asking the question about the change of their own person during the interview, we had the possibility to take into consideration the statements about the change in the context of the whole life story.

We decided to analyze only the interviews where the question about the change was raised explicitly. The final number of analyzed interviews was 41 (17 men and 24 women). The remaining fifteen interviews were excluded for the following two reasons: the first reason was technical problems such as a bad quality of the recording; the second, more frequent reason was the fact that the question about the change was not explicitly raised. Despite the fixed structure of the interview, we did not follow it rigidly. The development of the interview was guided by the nature of communication with participants. For example, in one case it was necessary to provide the respondent with a therapeutic intervention.

We assumed that most people would consider themselves stable, that they would perceive their life as coherent, and that they would feel the changes of their person only in some aspects of their personality. Our assumption may be expressed with the following statement: „Yes, I have changed, but it depends...“ Therefore, we expected the following development: Apart from the answer to the question about the change of personality (WHETHER they had changed), respondents would also speak about IN WHICH DOMAIN they had changed (i.e. „domain“ of the change).

During the analysis, it emerged that the statements contained another two categories of the description of the change. The first category was related to the source or cause of the change, i.e. WHY respondents had changed. We labeled this category „causal agent“ of the change. The second category was related to the process of the change, i.e. HOW the change had happened. This category was labeled „mode“ of the change. In table 7 the numbers of statements in individual categories are given. The question WHETHER the respondent had changed was of course answered by all participants, therefore it is not included in the table. According to our assumption, the majority of respondents said in which domain they had changed, twenty-six respondents stated the cause of the change and twenty respondents stated the process of the change.

Results of analysis of the category WHETHER are given in table 6. Thirty-four people said they had changed – their answer was YES. However, nobody said they had become somebody else or had been completely changed (including, for example, the change of a life style, break-up with some milieu etc.). They always referred to a partial change, saying: „Yes, I have changed, but only partly.“ Six people said they had not changed, but they always added some specification. („No...“, but you know, it changes you, some kind of event, when a relative dies...now, when I have a child, I have a different view...“). These answers were labeled NO, BUT... and we consider them more or less subcategories of the answer YES. Only one person said he/she had not changed.

36 people said IN WHICH DOMAIN they had changed. The identified areas of changes correspond to psychological characteristics of an adult person, as described – at least – in Czech professional li-

Table 5 Categories of telling about the change

	Categories of statements about personal change	Number of answers
Assumed	Domain of change	36
Revealed during analyzing	Causal agent of change	26
	Mode of change	20

Table 6 Perception of personal stability and change

WHETHER Change had occurred	N	(%)
YES	34	83
NO, BUT...	6	15
NO	1	2

Table 7 Domains of the change

In WHICH domain change had occurred	Trend	Number of statements		
		F	M	Total
Autonomy	(+)	4	2	6
Responsibility	(+)	1	3	4
Self –confidence	(+)	4	0	4
Calm	(+)	4	3	7
Rationality	(+)	4	1	5
Responsiveness	(+)	1	2	6
Values	Women	Towards family	4	7
	Men	Towards profession	3	
Bodily changes	(-)	1	2	3
Activity	(-)	1	1	2
Others		2	1	3

terature (Řičan, 1990, Vágnerová, 2000). Individual areas of changes are given in table 9. The „plus” and „minus” indicate the direction of normative change – for example the change towards higher self-confidence, greater rationality etc. We have created only the category „activity“ which contains not only physical activity (which might be subordinated to „physical changes“), but also social and overall activity („Now I am not as active as I used to be.“). All changes are also interpretable in the terms of five-factor model of personality where the decreases in neuroticism (increase of calm, rationality, and self-confidence) and extraversion (activity), and increases in conscientiousness (responsibility, autonomy) and agreeableness (responsiveness) are suggested (Costa, McCrae, 1989).

The causal agent of the change (WHY respondents had changed) was given by 26 respondents. Their reasons were either general („Life taught me a lesson“ – 11 cases) or specific (childbirth, parenthood, partner’s influence, divorce – 15 cases). Similarly, as the mentioned areas of changes correspond to psychological characteristics of an adult person, the causes of changes are represented by events that normally appear in the life of an adult person. The mentioned causes of changes correspond to life transitions, as showed for example by Settersten (2003) – e.g. leave home, marry, enter parenthood, exit full-time schooling, enter full-time work, settle on career/job.

The last category is the mode of the change (the answer to the question HOW). Again, there were two basic kinds of answers – the change as a turning point or a leap, and the change as a movement or development. The answer describing the change as developmental was more frequent (14 developmental interpretations vs. 6 turn interpretations) and in several cases was directly described as „maturity“ or „growing up“.

CONCLUSION

At present there is a lot of empirical evidence available concerning high personality stability in time, not only for adults but also between adolescence and adulthood and even between late childhood and adulthood (Caspi, 1998; Roberts and DelVecchio, 2000). There is also evidence proving that if man changes during his lifetime, these changes are developmental (Costa and McCrae, 1989). Our results support these findings and they are another element of proof in this respect. However, as far as connection between early child temperament and personality in adulthood is concerned, similar evidence is rather rare. Thus, we consider the results of the first study to be the most important ones. The fact that not only personality traits but also self-concept can be predicted out of the child temperament (even though it is a very global evaluation of one's own self) supports theoretical models emphasizing the role of dispositions in the creation and development of personality (McCrae and Costa, 1999).

In general, our findings indicate – in accordance with Funder et al. (1996) – that the essence of human development does not lie in consistency, but coherency. This coherence is the result of a process by which early experiences form a template for the interpretation of later experiences in life, and by which aspects of personality that develop early can affect how people select and change their social environments. Hence, the issue of personality coherence represents dominant topic of current psychology across individual disciplines and theoretical approaches

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THE LEXICAL APPROACH TO PERSONALITY DESCRIPTION IN THE CZECH CONTEXT¹

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ABSTRACT

In this article, I will present an overview of the lexical studies in the Czech context. First, I will introduce the structure of Czech personality-relevant adjectives and the validity of the Big Five factor structure in Czech language. Then, I will compare the Czech five-factor structure with other national five-factor structures. In the next part, the way to integrate the five-dimensional simple-structure and circumplex models of personality will be docu-

mented. At the end of this article the taxonomy and structure of the Czech personality-relevant verbs will be introduced.

Key words:

lexical approach,
Five-Factor Model,
taxonomy
structure,
personality-descriptive adjectives,
personality-descriptive verbs,
AB5C model

One of the most dynamic areas of personality research during the past two decades has been that of personality structure. The structure of personality characteristics has been examined using the lexical strategy in order to find major personality dimensions. The rationale for lexical studies rests on the assumption that meaningful personality attributes are encoded in language as single-word descriptors (Galton, 1884; Goldberg, 1990). Based on this rationale, a number of studies have been conducted examining a factor structure of mainly adjectival descriptors, which were extracted from dictionaries. The results of many studies in the field have supported the validity of the „Five-Factor Model“ with factors identified as (1) SURGENCY or EXTRAVERSION (*talkative, assertive, energetic*), (2) AGREEABLENESS (*good-natured, co-operative, trustful*), (3) CONSCIENTIOUSNESS (*conscientious, responsible, orderly*), (4) EMOTIONAL STABILITY or its opposite NEUROTICISM (*calm, neurotic, not easily upset*), (5) CULTURE, INTELLECT or in one inventory representation OPENNESS TO EXPERIENCE (*cultured, intellectual, unconventional*). Because the Five-Factor model has been proved to be robust across a diversity of studies, the five factors have been also called the Big Five. In the framework of the Big Five Model two approaches are usually differentiated: lexical (taxonomic) and dispositional (questionnaire). The name Big Five emerged from the psycholexical tradition and refers to the lexically based five-factor structures. Five Factor Model (FFM) refers to the Five-Factor Model as developed by the Costa and McCrae team.

The first stage of a lexical analysis of personality descriptors is a construction of a comprehensive list of personality-relevant terms as possibly included in a dictionary (in codified form) of a particular language. The aim of the second stage is to reduce the list and in the case of adjectives, to distinguish dispositions or traits (relatively stable characteristics of personality) from other characteristics used e.g. for a description of temporary mental states, physical symptoms, attitudes or appearance. In these two first stages, two different but related methodologies, are used. The terms are either classified into categories (Ostendorf, 1990; Szarota, 1996; Hřebíčková, 1997) or judgments of utility for describing personality are applied in order to reduce the list of the terms (De Raad, 1992; Caprara, Perugini, 1994).

In the third stage of a taxonomic project, a final list of traits is given to subjects for self-rating and/or peer-rating. Using factor analysis, traits are usually grouped into five factors, which can be interpreted in a similar way, only with minor deviations across different languages and cultures.

The lexical projects have been first pursued in American English (Allport, Odbert, 1936; Norman, 1967; Goldberg, 1982) and afterwards spread to Europe and Asia. The lexical studies of per-

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sonality descriptors systematically extracted from the lexicon have now been published for about 15 languages¹.

Results of most lexical studies have supported the validity of the Big-Five model previously identified in English (Ostendorf, 1990; DeRaad, 1992; Somer, Goldberg, 1999; Schmelyov, Pochilko, 1993; Szarota, 1996; Mlačić, Ostendorf, 2004; Hřebíčková, 1997). However, results that differ more or less from the original Big Five structure are to be found (Di Blas, Forzi, 1998; Benet-Martínez, Waller, 1997; Boies, Lee, Ashton, Pascal, Nicol, 2001; Almagor, Tellegen, Waller, 1995; Almagor, Tellegen, Waller, 1995; Hahn, Lee, Ashton, 1999; Church, Katibak, Reyes, 1996).

In this article, I will present an overview of the lexical studies in the Czech context. First, I will introduce the structure of Czech personality-relevant adjectives and the validity of the Big Five factor structure in Czech language. Then, I will compare the Czech five-factor structure with other national five-factor structures. In the next part, integrating the five-dimensional simple-structure and circumplex models of personality will be documented. Abridged Big Five Dimensional Circumplex (AB5C) taxonomy was applied to data consisting of 397 self-ratings on 358 Czech representative personality trait adjectives. At the end of this article the taxonomy and structure of the Czech personality-relevant verbs will be introduced.

1. TAXONOMY AND STRUCTURE OF THE CZECH PERSONALITY-RELEVANT ADJECTIVES

At the end of the last century Professor Alois Angleitner from the University of Bielefeld coordinated a number of research projects aimed at verification of the Five-Factor Model of personality in several languages including Czech. Lists of Czech potential personality-relevant adjectives (*tal-kative, polite*), type (*altruist, scrooge*) and attributive (*sensitivity, secretiveness*) nouns, and verbs (*lie, ponder*) were formed in the first phase of the lexical project. The lists of personality-relevant adjectives and verbs were reduced in the second phase. In the third phase, a structure of a personality relevant lexicon in the two above mentioned linguistic categories was derived.

A taxonomic procedure starts with creating an exhaustive list of personality descriptors. From the Dictionary of Standard Czech (Academia, 1989), containing approx. 28,000 adjectives, all potentially person-descriptive adjectives were excerpted. Four thousand one hundred and forty-five potential personality relevant adjectives were selected using a German classification system (Angleitner, Ostendorf, John, 1990). The German classification system contains five superordinate categories (1. *Dispositions*, 2. *Temporary conditions*, 3. *Social and reputational aspects*, 4. *Overt characteristics and appearance*, 5. *Terms of limited utility*). The five super ordinate categories were split into two to four subcategories (together 13 subcategories). In a classification task, six judges assigned the 4,145 terms to the 13 categories. The Interjudge agreement was evaluated by means of Cronbach Alpha (Category 1, *Dispositions*; $\alpha = 0.81$); the stability of the judgements was assessed on the basis of random sample of 100 terms, was $r = 0.73$ for Category 1. (Hřebíčková, 1995; Hřebíčková, 1997).

Only those adjectives assigned to the category of *Dispositions* by a majority of the judges were chosen to represent the given domain of trait terms. This procedure resulted in selecting 366 adjectives.

To examine the structure of Czech personality language, the 366 representative trait descriptors were used as variables in a self-rating task. The representative set of Czech trait adjectives was presented to 397 subjects, 17 – to 81 age-bracked ($M = 31.3$ years; $SD = 14.4$ years) in unipolar five-point rating scales. Eight adjectives were discarded from the data set because at least 25% of the judges were not familiar with them. The factor analysis was applied to 397 self-ratings on 358 adjectives. To minimize potential effects of response biases, each subject's responses were first standardized. A principal component analysis was performed on the matrix of 397 subjects and 358 personality descriptors. The plot of the first 150 eigenvalues showed five dominant principal components. These five components were rotated according to Varimax.

¹ German (Ostendorf, 1990); Dutch (Brokken, 1978; DeRaad, 1992); Italian (Di Blas, Forzi, 1998; Caprara, Perugini, 1994), Spanish (Benet-Martínez, Waller, 1997); French (Boies, Lee, Ashton, Pascal, Nicol, 2001), Hungarian (Szirmák, De Raad, 1994), Turkish (Somer, Goldberg, 1999; Goldberg, Sommer, 2000), Hebrew (Almagor, Tellegen, Waller, 1995), Korean (Hahn, Lee, Ashton, 1999), Filipino (Tagalong) (Church, Katibak, Reyes, 1996), Polish (Szarota, 1996), Russian (Schmelyov, Pochilko, 1993), Croatian (Mlačić, Ostendorf, 2004), Czech (Hřebíčková, 1997). For more details see Saucier, Hampson, Goldberg (2000).

The first five representative factors could be interpreted as Big Five. Table 1 shows the first 20 variables with highest loadings on both poles of the factor I – V. A Conscientiousness factor explained most of the variance (24.2%), factor Intellect 19.6 %, Surgency or Extraversion 22.9%, Agreeableness 18.45% and at least variance explained factor Emotional Stability (14.9%).

Validity of the Czech five-factor structure

In order to prove the validity of the Czech five-factor structure, three criteria were used. First, prototypicality indices (internal structure) of the 366 Czech representative trait adjectives for the five factor model reported by Normans' representative Big Five structure in English (1963) were collected. In addition Osgood's (1957, 1975) three dimensions of affective meaning and the constructs of the Wiggin's circumplex model of the interpersonal characteristics (1980) were used to prove the construct validity of the Czech five-factor structure. Seven experts were asked to rate prototypicality of each adjective for the five Norman factors, for sixteen facets of Wiggin's circumplex model and for three Osgood's dimensions.

The varimax structure of the Czech prototypicality ratings for Norman FFM resulted in five factors, which could be interpreted as the Norman five-factor model. The outcomes of the analysis have shown that Czech personality language contains just a few terms for describing Emotional stability or Neuroticism. The majority of facets from the Wiggin's circumplex model correlated with Norman factors Surgency – Extraversion (SU) and Agreeableness (AG), the facet Submissive – Dominant correlated additionally with Norman factor Emotional Stability (ES). The facet Ambitious – Lazy of the Wiggin's circumplex model correlated with Norman's factor Conscientiousness (CO). The evaluation from Osgood's three dimensional model correlated with three Norman's factors (AG, CULTure, CO), Activity with three factors (CO, SU, CU) as well and Potency correlated with four factors (CO, ES, CU, SU).

Another strategy employed to test the validity of the Czech five-factor structure was a comparison with translated Big Five markers and with a NEO Five-Factor Inventory. The 171 rating scales previously published by Norman (1963), Goldberg (1983), McCrae and Costa (1987), Peabody (1987, 1984), Peabody and Goldberg (1989) and John (1983) as Big Five markers were translated into Czech. Four hundred and fifteen Czech subjects were asked to rate themselves on the 171 bipolar adjective scales. A principal components analysis with Varimax rotation was performed and the five factors were rotated according to Varimax. The five-factor solution represents a clear demonstration of the Big Five factors.

The NEO Five-Factor Inventory by Costa and McCrae (1992) was applied as a further validity criterion. The NEO-FFI includes 60 self-report items (12 per scale) measuring the personality dimensions of Neuroticism (with an alternative label Emotional Stability), Extraversion, Openness to Experience², Agreeableness and Conscientiousness³.

To evaluate the convergent and discriminant validity of the Czech representative five-factor structure across different instruments, correlations of the representative Czech five-factor structure with the factor scores from the 171 bipolar rating scales (translated Big Five markers) and NEO-FFI were calculated. The scores for the first three factors (SU, AG, CO) correlate highly, the scores for factor Intellect (IN) showed low correlation. The correlation of the NEO-FFI scales with factors derived from the 358 representative self-rating scales and 171 bipolar self-rating scales are generally lower, especially for the factor V (Intellect), which conceptually differs from Openness to Experience.

Structure of the Czech trait adjectives: Five- till eight-factor solution

In a five-factor solution, a high correspondence between the pattern of loadings and the prototypicality indices (internal structure) was detected for four factors ($r = 0.81 - 0.88$). The pattern of loadings of Factor IV Emotional Stability showed less correspondence with the appropriate prototypicality ratings of the adjectives according to Norman's system ($r = 0.69$). Despite this low correlation among the factor pattern and the prototypicality indices, the fourth factor could

² Openness to Experience is not rooted in the psycholexical tradition. Open individuals are curious about both inner and outer world, and their lives are rich. They are willing to entertain novel ideas and unconventional values, and they experience both positive and negative emotions more extremely than do closed individuals (Costa, McCrae, 1992, p. 15).

³ Professional Manual of the Czech version of the NEO Inventories (NEO-FFI and NEO-PI-R) is available for Czech psychologists (Hřebíčková, Urbánek, 2001; Hřebíčková, 2004).

Table 1. Representation of the Czech five-factor structure

I	+	<i>loquacious (řečný), voluble (výřečný), talkative (hovorný), chatty (mluvný), lively (temperamentní), eloquent (výmluvný), sociable (společenský), energetic (energický), communicable (sdělný), communicative (sdílný)</i>
	-	<i>close (uzavřený), taciturn (málomluvný), silent (tichý), incommunicative (nemluvný), untalkative (mlčenlivý), solitary (samotářský), shy (plachý), sheepish (ostýchavý), diffident (nesmělý), unsociable (nedružný)</i>
II	+	<i>kind-hearted (dobrosrdečný), benign (dobrotivý), affable (přívětivý), fair (poctivý), hearty (srdečný), forbearing (snášelivý), upright (charakterní), moral (mravný), polite (zdvořilý), good-natured (dobromyslný)</i>
	-	<i>domineering (panovačný), pugnacious (útočný), revengeful (pomstychtivý), hard-hearted (necitelný), having a tendency to expand (rozpínavý), despotic (despotický), aggressive (agresivní), rough (drsný), authoritarian (autoritářský), intolerant (nesnášelivý)</i>
III	+	<i>thorough (důkladný), consistent (důsledný), sedulous (pilný), conscientious (svědomitý), conscionable (pečlivý), purposeful (cilevědomý), hard-working (pracovitý), emphatic (důrazný), systematic (systematický), persistent (vytrvalý)</i>
	-	<i>indolent (lenošný), lazy (lenivý), unconscientious (nesvědomitý), unpersistent (nevytrvalý), chaotic (chaotický), unstable (nestabilní), dawdling (loudavý), inattentive (nepozorný), indecisive (nerozhodný), lax (laxní)</i>
IV	+	<i>calm (klidný), composed (vyrovnaný), handy (zručný), courageous (odvážný), collected (duchapřítomný), skilful (dovedný), dextrous (obratný), self-assured (sebejistý), resistant (odolný), proficient (umný)</i>
	-	<i>gets easily agitated (rozrušitelný), nervous (nervní), inflammable (vznětlivý), easily excitable (lehkovznětlivý), irritable (popudlivý), labile (labilní), touchy (vztahovačný), restless (neklidný), anxious (úzkostlivý), angry (zlostný)</i>
V	+	<i>clever (chytrý), intelligent (inteligentní), bright (bystrý), well-educated (vzdělaný), intellectual (intelektuální), gifted (nadaný), knowing (znalý), talented (talentovaný), sharp-witted (důvtipný), receptive (chápavý)</i>
	-	<i>fatuous (přihlouplý), silly (blbý), half-witted (přiblblý), unintelligent (neinteligentní), idiotic (idiotský), doltish (hlupácký), daft (pitomý), stupid (hloupý), ungifted (nenadaný), untalented (netalentovaný)</i>

Note. Table 1 gives the representative terms from the five-factor solution. The factors are presented using ten trait variables for each factor pole (+, -). These terms were the highest loading terms per pole ($\leq .30$). I = Extraversion-Surgency, II = Agreeableness, III = Conscientiousness, IV = Emotional Stability, V = Intellect

be interpreted as Emotional Stability (see Table 1). In addition, variables that loaded on the positive pole of Factor V according to the prototypicality ratings (e.g. *skilful, dextrous, handy, proficient*), and the negative pole of Factor II (e.g. *egotistic, angry*) showed significant loadings on Emotional Stability. In summary, the factors of the Czech five-factor structure are labeled as Extraversion – Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Intellect provide a fairly typical version of the Big Five. In comparison with other six representative Big Five structures emerged that the Czech factor Intellect has a “Culture” coloring (Norman, 1963), expressed by the combination of well-educated, knowledgeable, educable, and understanding (De Raad, Perugini, Hřebíčková and Szarota, 1998).

A six-factor solution showed that the factor Intellect split into two factors, the first one representing Intellect, and the other could be interpreted as an Achievement Ability factor. Adjectives that loaded on the Achievement Ability factor were *nimble, skilful, agile, inventive* vs. *clumsy, unskilful, slow, uncreative*. The interpretation of the factor was stable also in seven- and eight-factor solutions.

The seventh factor in a seven-factor solution was a combination of the factors Agreeableness and Emotional Stability. Loading patterns of the seventh factor correlated with prototypicality ratings for factors Agreeableness $r = 0.59$ and Emotional Stability $r = 0.55$. Other significant correlations with prototypicality ratings were to be found in the case of facets Agreeable – Quarrelsome ($r = 0.65$) and Unassuming – Arrogant ($r = 0.57$). Adjectives that loaded highest on the factor were *calm, composed, harmonious* vs. *easily excitable, irritable, angry* and *contentious*.

In an eight-factor solution one factor was interpreted as a Submissivity factor (e.g. *manipulable, submissive, adaptable, and fearful* vs. *seditionous, pugnacious, intractable, self-assured and independent*). The factor Submissivity correlated with prototypicality rating for Wiggins' facet Submissive – Dominant and with prototypicality ratings for three of the Big Five factors (Surgency – Extraversion $r = 0.32$, Agreeableness $r = -0.31$, Emotional Stability $r = 0.38$). The eighth factor could be interpreted as a facet of Intellect (e.g. *thoughtful, dreamy, curious* vs. *unmusical, realistic, modest*). The factor was called Fantasy.

Cross-cultural comparisons of the five-factor structures

The Czech five-factor structure has been used in cross-cultural comparisons. De Raad has instigated several studies comparing five-factor structures in different languages (De Raad, Perugini, Szirmák, 1997; De Raad, Di Blas, Perugini, 1998; De Raad, Perugini, Hřebíčková, Szarota, 1998). In one of the studies De Raad, Perugini, Hřebíčková and Szarota (1998) compared seven languages (English, Dutch, German, Hungarian, Italian, Polish and Czech). Within each language, terms that had clear English equivalents in the Goldberg list (1992) of 540 trait-descriptive adjectives were identified. Furthermore, these languages congruence coefficients were calculated using the American English solution as a benchmark. The results showed that Italian and German structures find the best accommodation with the American English structure, and Hungarian and Czech fit the worst out of all six languages.

Peabody and De Raad (Peabody, De Raad, 2002; De Raad, Peabody, 2005) chose another strategy for comparing the five-factor structures across languages. They used a qualitative examination looking carefully at a content of the factors derived from the five-factor structures in different languages. The qualitative examination showed a universal validity of the factor Conscientiousness in all six structures under study (Czech, Dutch, Hungarian, Polish and two independent Italian taxonomies). The content of the first factor Extraversion resembled in all of the six structures as well. The second factor Agreeableness split and connected with characteristics of the fourth factor Emotional Stability in three taxonomies (Hungarian and two Italian). So far, a questionable content of the fifth factor has been extensively discussed. The fifth factor differs in particular national studies and is also labeled differently (e.g. Intellect, Culture or Integrity). Peabody and De Raad found out that neither factor IV (Emotional Stability) appears to be cohesive. The above mentioned findings suggest that the Big Three structure comes closer to cross-cultural generalizability.

II. ABRIDGED BIG FIVE CIRCUMPLEX MODEL (THE AB5C)

In order to classify the structure of personality traits, two taxonomy models are usually used – a dimensional model and a circumplex model. Big Five represents such a dimensional model, which consists of five bipolar dimensions. In a circumplex model, the traits are defined by their position on axes created by two independent dimensions. E.g. in the well-known Wiggins' interpersonal circumplex, eight interpersonal trait clusters are arranged in a circular ordering around the underlying coordinates of Dominance and Nurturance. (Wiggins, 1980).

According to Osecká (2000), an advantage of the circumplex model is the possibility to identify semantically close and cohesive trait-clusters. A disadvantage of a two-dimensional circumplex model is that it covers only a certain part of personality traits e.g. just interpersonal characteristics in the Wiggins' interpersonal circumplex. Hofstee, De Raad and Goldberg (1992) thus attempted to connect the dimensional Big Five model to a circular ordering and created the Abridged Big Five Dimensional Circumplex (AB5C). Generally, it would be possible to construct a five-dimensional circumplex for the Five Factor Model. However, the authors constructed an „abridged” five-dimensional model relying on the findings from several lexical studies in which the majority of traits do not correlate with more than two factors significantly. The model consists of 10 circumplexes, the ten pairs of factors each constituting a circumplex plane, with a single circumplex accommodating only those trait-variables that have their highest two loadings on the factors of that circumplex.

Another salient problem in a circular ordering of personality traits represents the question of how many parts should the circle be divided, in other words, how many pieces should the cake be cut (De Raad, 2000). In the AB5C model, each two-dimensional circumplex is divided into 12 segments. The segments are separated by lines at 30° of the twelve factors or vectors. The segment I+I+ represents traits that have only substantial loadings on the plus-pole of factor I; the segment I+II+ contains the traits that have primary positive loadings on Factor I and secondary positive loading on factor II, II+I+ contains traits that have primary positive loadings on factor II and secondary positive loadings on factor I, etc.

The algorithm for assigning traits to segments starts with the Varimax-rotated loadings of the variables. Only the two highest loadings of a variable are considered. If the primary loading is at least 3.73 as large as the secondary, the variable is assigned to the pure-factor segment associated with the primary loading. For example *voluble*, with its highest loading of .71 on Factor I and its highest secondary loading of .09 on factor V, would be assigned to the I+I+ segment. The remaining traits are assigned to mixed factor segments according to their primary and secondary loadings. For example *dominant* with its primary loading on .31 on Factor I and its secondary loading of -.27 on Factor II, is assigned to the I+II- segment. *Pugnacious* has its primary negative loading -.48 on factor II and secondary positive loading .28 on factor I and therefore is assigned to I-I+ segment.

The extent to which the trait is represented by the model is indexed by the length of its projection on the bisectrix of the segment. The angle between the bisectrix and the factor on which the variable has its primary loading is 30°, and it is 60° with the secondary factor. Accordingly, the projection length h is: $h = a_1 + \cos(30^\circ) + a_2 \cos(60^\circ)$, with a_1, a_2 being the absolute values of the primary and secondary loadings, respectively.

We applied the AB5C procedure to data from the Czech representative five-factor structure (matrix of 397 self-ratings on 358 Czech personality trait adjective).

The application of the AB5C principles optimizes the use of the factor matrix. The result is a fine-grained portrait of traits, ordered in ten circumplexes (Hřebíčková, Ostendorf, 2005). An alternative representation of the AB5C results is in Table 2. It is the full-blown AB5C-model, economically represented in 10 x 10 matrix format, of which both the columns and the rows represent the ten poles of the five factors. Table 3 should be read vertically. Adjectives in the cells have their primary loading on the column factors and their secondary loading on the row factors. The cells of the matrix correspond to the 90 distinct segments of the ten circumplexes (opposite poles of the same factor do not produce existing blends; those cells are empty by definition, marked by xxxx in the Table 2). No more than three adjectives with the highest projection are presented in the cells, the number in each cell reports the amount of adjectives in a particular segment.

The empirical analyses using AB5C methodology was applied in several trait adjective structures (Hofstee, De Raad, Goldberg, 1992; De Raad, 2000; Johnson, Ostendorf, 1993; Hřebíčková, Ostendorf, 2005) and verbs structures (De Raad, Hofstee, 1993).

In all three mentioned studies, adjectives expressing sociability and communicativeness belong to the pure segment (I+, I+). In the Czech study, two adjectives (*benign, conciliatory*) are to be found in segment II+ II+. In the Johnson and Ostendorf's study, three adjectives (*acquiescent, gentle, softhearted*) are to be found in the same segment. Hofstee and his colleagues introduced the highest number of traits belonging to pure segment (*sympathetic, kind, warm, understanding, sincere, compassionate, cordial, accommodating*).

Previous studies have confirmed that characteristics of the Agreeableness factor are evaluated as socially desirable. Simultaneously, the relation between these characteristics and femininity was proven (John, 1990). This fact also corresponds to findings from three independent studies employing the AB5C methodology.

In the pure segment III+ III+, adjectives like *consistent* or *principled* represent the third factor Conscientiousness. More adjectives enter this segment in both foreign studies. According to Johnson and Ostendorf, adjectives in this segment characterize a disciplined, meticulous person who likes things to be ordered and is focused on details. In the study of Hofstee et al., this segment could be interpreted in a similar way. Adjectives that semantically correspond to a usual interpretation of this factor like single-mindedness and concentration on accomplishing tasks are not to be found in the unambiguous segment (III+ III+). An interpretation of the fourth factor based on adjectives from the segment IV+ IV+ is rather problematic as there were no adjectives to be found in the Czech study. Hofstee et al. found only one trait descriptor (*unenviuous*) in this segment as in the case of Johnson and Ostendorf's study (*calm*). Johnson and Ostendorf assume that the core of the fourth factor is the absence of negative emotions. In both foreign studies, meaning of the segment V+ V+ can be interpreted as creativity. It contains the adjectives *artistic, creative, and imaginative*. In the Czech study, the pure segment V+ V+ contains only an adjective (*educated*) and therefore the segment could be rather interpreted in accord with a Norman's (1963) definition of the fifth factor as Culture.

The already mentioned pure segments contain prototypic characteristics for each factor of the five-factor structure. However, the characteristics comprised in mixed factor segments are also important for defining each factor. The outcomes from the AB5C methodology show that the scales designed to measure the five dimensions of personality are not defined by the traits that belong to pure segments, but rather by traits from mixed factor segments. The only exception represents the Extraversion dimension. Hofstee et al. (1992) mention the natural „promiscuity“ of the

Table 2 AB5C model: A periodic system of Czech personality traits

Extraversion		Agreeableness		Conscientiousness		Emotional Stability		Intellect	
I+	I-	II+	II-	III+	III-	IV+	IV-	V+	V-
I+	loquacious voluminous talkative 6	close taciturn silent 7	kind-hearted hearty help- ful 4	pugnacious go-ahead quick-tempe- red 10	emphatic decisive active 5	courageous dextrous self- assured 7	inflammable easily exci- table hot-tem- pered 4	shrewd in- quisitive 2	0
I-	XXXXXXX	restrained unaggressive non-violent 4	hard-hearted guileful 2	precise pedantic prudent 3	lazy indolent irresolute 10	Calm 1	fearful pessimistic skeptical 3	contempla- tive reflecti- ve 2	untalented ungifted indocile 10
II+	socially communicable communicative 5	demure gentle unpassionate 3	XXXXXXX	XXXXXXX	dreamy 1	0	anxious 1	receptive educable perceptive 4	uncreative 1
II-	combative dominant bellicose 3	solitary unap- proachable stringy 3	XXXXXXX	unsubmissi- ve 1	0	0	irritable angry irascible 5	sapient stra- tegic 2	0
III+	energetic assertive bold 8	serious reser- ved 2	upright fair disciplined 16	dogged strict 2	consistent principled 2	composed harmonious handy 5	0	ambitious thoughtful provident 4	0
III-	spontaneous reactive 2	shy diffident infirm 11	good-natured adaptable 2	revengeful malevolent egoistic 10	XXXXXXX	carefree ad- venturous 2	Gets easily agitated ner- vous labile 8	curious 1	fatuous half-witted simple-min- ded 12
IV+	fast casual flexible 5	0	forbearing tolerant opti- mistic 4	rough cold- blooded insidious 4	0	0	XXXXXXX	clever inte- ligent bright 20	week-minded analphabetic illiterate 3
IV-	impulsive 1	suspicious 1	emotional compassionate submissive 6	domineering argumentative conflicting 7	meticulous punctilious 2	XXXXXXX	sentimental 1	0	awkward unskilled 2
V+	passionate 1	reflective 1	affable 1	authoritarian egocentric unyielding 5	through purposeful systematic 13	collected skilled profici- ent 7	0	educated 1	XXXXXXX
V-	0	unsociable undynamic sedate 4	unselfish un- assuming 2	unfeeling brutal sadis- tic 7	0	0	0	XXXXXXX	silly unin- telligent idiotic 7

factors. According to them, some factors copulate with each other and have many offspring together. Johnson and Ostendorf inspired by chemistry introduce another metaphor. According to them, the factors defined by the characteristics from pure segments represent chemical elements, whereas the characteristics from the combination of various segments resemble chemical compounds.

An extension of the simple dimensional trait structure to its circumplex ordering in accordance with the AB5C methodology provides a relational frame for clearing up the relations and distinctions among various approaches towards defining the dimensions (factors) of the five-factor model and its particular characteristics. Only a few trait descriptors can be classified into pure segments. The majority of trait descriptors is placed in mixed segments and gets the meaning's shade from another factor. Only 8% of the Czech personality-relevant traits could be assigned to a poor segment and 92% of traits are a combination of positive or negative pole of the factors of the five-factor structure. The AB5C methodology is also employed by a construction of psychodiagnostic methods e.g. Five Factor Personality Inventory – FFPI, Hendriks, 1997; International Personality Item pool –IPIP, Goldberg et al, 2006).

III. TAXONOMY AND STRUCTURE OF CZECH PERSONALITY-RELEVANT VERBS

Until recently, most taxonomies were based on analyses of personality descriptive adjectives. The reason probably rests on the assumption that adjectives describe stable personality characteristics, thus doing a better job in assessment of personality traits than other linguistic categories. Verbs, on the other hand, which are typically used to describe specific patterns of behavior in specific situations, are probably more adequate for description of states like observable activities (e.g. *to talk*) and experiential states (e.g. *to hate*). However, in the past, verbs have received less research attention.

The first systematic and comprehensive taxonomy of personality descriptive verbs was provided by De Raad and co-workers for Dutch language (De Raad, 1992; De Raad, Mulder, Kloosterman, Hofstee, 1988). De Raad (1992) obtained a robust solution with two factors labelled Agreeableness and Emotional Stability. The general aim of the Czech taxonomy project was to examine whether the Big-Five factors can be identified in another linguistic category, namely the domain of Czech personality-relevant verbs.

Our lexical study was the first attempt to select all personality-relevant verbs from the Czech lexicon (Hřebíčková, Ostendorf, Osecká, Čermák, 1999). The resulting comprehensive and representative list of Czech personality-relevant verbs can serve as a tool for the development of taxonomy, dimensional analyses, and the future construction of personality assessment instruments. Such a comprehensive taxonomy of personality-relevant terms provides a common framework for research led by different theoretical orientations and could guide the selection of variables for research (John, Angleitner & Ostendorf 1988). First the representative and exhaustive list of personality-descriptive verbs was constructed. From the eight-volume Dictionary of Standard Czech (Academia, 1989), containing about 119, 000 separate entries, all verbs that can be used „to distinguish the behavior of one human being from that of another“ (Allport, Odbert, 1936) were extracted. 2,374 potentially personality-relevant verbs (7% of all verbs) were found in the dictionary. In the next step the list was reduced by semantic and syntactic criteria. All verbs from the list that were marked as archaic, bookish, rarely used, dialectal, poetical in the dictionary were excluded. Furthermore, the imperfective verbs were left in the list, while the perfective verbs (175) were excluded. Finally, verbs with prefixes were excluded in cases where these verbs had the same meaning as their basic forms. After applying all these criteria, the list was reduced by 844 verbs. The final version of the personality-relevant verbs list contained 1,530 items.

However, taxonomy of personality-relevant verbs must provide more than an alphabetical listing. A useful taxonomy should provide a systematic framework for distinguishing, ordering, and naming individual differences in people's behavior and experience (John, 1989). Therefore, in the second stage of the lexical project, we continued with a further reduction. Semins and Fiedler's classification system was used to reduce the comprehensive list of Czech personality-relevant verbs (Semins, Fiedler, 1988). Their four-level classification distinguishes between personality-relevant verbs and adjectives. Verbs are sorted into three major domains: „Descriptive action verbs“ (referring to neutral, concrete description of an action with clear beginning and end of an action, e.g. *to call*, *to kiss*, *to talk*), „Interpretative action verbs“ (referring to rather general classes of behavior with positive and negative semantic connotations, which interpret the behavior, e.g. *to help*, *to cheat*, *to cheer*), and „State verbs“ (refer to mental or emotional states, which have no clear definition of beginning and

end of an action, they are in fact abstract statements that usually cannot be verified objectively by an observer, e.g. *to like, to hate, to trust*). The four linguistic categories are organized along a continuum of concreteness – abstractness (from descriptive action verbs to adjectives). The advantage of this taxonomy lies in the fact that its classes discriminate between verbs that describe actions, verbs that interpret actions, and verbs that refer to mental or emotional states. „Interpretative action verbs“ are more situation-specific, whereas „State verbs“ are more person-specific.

Ten independent judges were recruited for the classification task. The judges rated their familiarity with the meaning of each verb and the personality relevance of the verb defined by the question „If someone (verb) more often than others then that behavior shows his/her personality“. When a verb passed the „Clarity of meaning“ and „Personality relevance“ criteria, the judges classified the verb into one of the three Semins' and Fiedler's categories. To obtain a measure of the degree to which a verb fitted into a particular taxonomic category, a prototypicality score reflecting the number of judges who classified the verb as belonging to a given category was computed. Reliability with which the judges used each category was evaluated in terms of internal consistency (Coefficient Alpha) and stability of the prototype scores assessed at two different times for a subsample of 100 terms (after twelve months). The Alpha and the stability coefficient were higher for the verbs from the category „Descriptive action verbs“ than for the „Interpretative“ and „State verbs“. This finding seems to support the assumption that verbs from the latter categories in fact describe more abstract classes of behavioral acts and internal conditions. A verb that can be considered as a prototypical example of a category should be classified into a given category by majority of the judges (it means by 6 or more judges). Using this criterion, we found that 578 of the 1,530 verbs (37,7%) could be considered as prototypical members of one of the three verb classes.

The largest category, accounting for 25% of the total pool, was „Interpretative action verbs“, followed by „Descriptive action verbs“ with 8%, and „State verbs“ with 4%. Only those verbs that were assigned by the majority of the judges to the „Interpretative“ and „State“ verbs categories were included in the final list of 289 personality-descriptive verbs.

Finally we examined the major dimensions of personality description that would result from a factor analysis (Varimax rotation) of the reduced set of 289 verbs in a sample of 475 self-reports. The two to six factor solutions were performed. Because of space limitation only short descriptions of the four factor solutions, which is more comparable with Big-Five, is presented. The first factor covered affiliant, nurturant and emphatic behavior on the positive pole (e.g., *to love, to associate with a person*) which was supplemented by two facets: Self-Reflection (*to contemplate, to ponder*) and Positive Experiencing (*to become enthusiastic, to hope*). The negative pole of the first factor was defined by dominant, hostile or even aggressive behavior. This pole covered particular verbs expressing aggression (*to make fun of a person, to oppress*). The meaning of this pole also included another facet – Irresponsible Behavior (*to slack about*). The second factor comprised verbs expressing the experience of anxiety, uncertainty, negative emotions, and submission (*to be afraid, to be in despair*) on its positive pole. The negative pole was defined by characteristics that seemed to be related to the construct of Sensation-Seeking (Zuckerman, 1979): expressing showing off, excitement, and fun seeking. In the third factor, there are verbs characterizing negative emotional reactions and direct aggression on one pole but the opposite pole had a different meaning. It included verbs expressing empathy (*to associate with a p., to encourage, to imagine oneself in the position of sb.*). The fourth factor comprised verbs expressing carelessness (*to loiter, to do a t. badly*) on one pole and verbs describing ambition (*to toil, to commit oneself, to aspire, to excel*) on the opposite pole. In Table 3, the four-factor solution is represented by the 20 verbs that showed the highest loadings for each pole of the Varimax-rotated factors.

In certain respects, the structure of personality descriptive verbs resembles the structure of adjectives found in the personality lexicon. In all the solutions reported, the first verb factor refers to characteristics that are summarized by the Big-Five Factor II (Agreeableness) in the domain of adjectives. The second verb factor includes characteristics of the Big-Five factors Emotional Instability, Introversion, and Extraversion, and the fourth verb factor of the four-factor solution seems to parallel Conscientiousness, the well known Big-Five Factor III. The most important difference between the structures of the two word classes seems to be that there is no verb factor covering the content of Big-Five Factor V, Intellect or Openness to Experience.

Furthermore, there are striking similarities between the three-factor solutions in Czech and Dutch. In both languages, the first verb factor corresponding to the Big-Five Agreeableness splits into two. In a four-factor solution, a third version of Agreeableness is added in Dutch, a result that parallels our findings in the domain of trait adjectives (see also Ostendorf, 1990). The characteristics related to work, as is usual for the Conscientiousness factor in the Big Five can be found in the the four-factor solution in Czech. The factor Conscientiousness in the five-factor solution was

Table 3. The four-factor structure of Czech personality descriptive verbs

I	+	<i>to oppress (utlačovat), to toady to a p. (podlézat), to make fun of a p. (posmívat se), to betray (zradit), to tyrannize over a p. (tyranizovat), to take revenge (mstít se), to endanger (ohrožovat), to bully (šikanovat), to force (násilnit), to enslave (zotročit)</i>
	-	<i>to have compassion on a p. (soudčit), to soothe (konejšit), to enjoy together (spoluprožívat), to console (chlácholit), to get sentimental (rozcitlivět se), to contemplate (rozjímat), to care about (pečovat), to brood over (zadumat se), to meditate (meditovat), to ponder (hloubat)</i>
II	+	<i>to be shy (ostýchat se), to be ashamed (stydět se), to get frightened (plašit se), to get anxious (zneklidňovat se), to be in despair (zoufat si), to get scrupulous (úzkostlivět), to get sorrowful (smutnět), to worry (strachovat se), to be afraid (obávat se), to get distressed (neklidnět)</i>
	-	<i>to flirt (flirtovat), to loosen up (odvázat se), to seduce (svádět), to be out on a spree (flámovat), to dazzle (oslnit), to dally (laškovat), to joke (vtípkovat), to impress (zapůsobit), to be impertinent (dovolovat si), to provoke (provokovat)</i>
III	+	<i>to fire up (rozohňovat se), to vituperate (láteřit), to berate (hartusit), to hold a grudge against somebody (nevražít), to get angry (dohřát se), to become enemies (znesvařovat se), to contend (svářit se), to get depressed (trudnomyslnět), to vaunt (holedbat se), to grumble (reptat)</i>
	-	<i>to imagine oneself in a position of sb. (vcitřovat se), to associate with a p. (přátelít se), to confine to a p. (svěřovat se), to be frank (otevírat se), to tolerate (tolerovat), to inform against a p. (donášet), to love (milovat), to have a compassion on a p. (soudčit), to encourage a p. (povzbuzovat), to make a p. happy (obšťastňovat)</i>
IV	+	<i>to loiter (lajdačit), to do something carelessly (odflínout), to slack about (flákat se), to trapes (lajdat se), to do something in slovenly way (odfláknout), to be naughty (darebačit), to shirk (ulejvat se), to idle away (lenošit), to get lazy (lenivět), to get villainous (lotrovatět)</i>
	-	<i>to persecute (perzekuovat), to moralize (moralizovat), to excel (excelovat), to get conservative (konzervativnět), to toil (dřít se), to become wise (zmoudřet), to commit oneself (angažovat se), to aspire (aspirovat)</i>

Note. Table 3 gives the representative terms from the four-factor solution. The factors are presented using ten trait variables for each factor pole (+, -). These terms were the highest loading terms per pole ($\leq .30$).

I+ Hostility vs. I- Affiliation, Self-reflection, II+ Anxiety, Emotional Instability vs. II- Showing off, Excitement, III+ Negative Emotional reaction, direct aggression vs. III-Empathy, Affiliation, IV+ Carelessness vs. IV-Ambition

also found in Dutch.

In summary, we have found relations between the domain of personality-descriptive verbs and the domain of personality-descriptive adjectives, the latter one being adequately described by the Big-Five personality factors Surgency – Extraversion, Agreeableness, Conscientiousness, Emotional Stability, Intellect. However, our inspection of the verb and adjective factors also indicated that the structures of both word classes were not fully equivalent. In addition, the AB5C model of Czech personality traits brings better understanding of the content of the Czech five-factor structure.

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PSYCHOSOCIAL INEQUALITIES IN HEALTH: TWO CZECH NATIONAL STUDIES^{1,2}

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ABSTRACT

The socioeconomic gradient is projected into morbidity and mortality indicators in all advanced western societies. Psychosocial inequalities affecting the health status and health care have been scarcely investigated so far in the Czech Republic. Under conditions of proceeding socio-economic differentiation of our society the hitherto lacking findings which could be compared with those from other countries are a handicap not only as regards scientific knowledge but e.g. also in planning of health and social policy, of economics and in the approach to problems associated with globalisation. In this submitted paper, two contemporary

studies are presented concerned with the given problem. From the results of both national studies ensues distinct social gradient in self-rated health in the Czech population. It is the task for psychologists to (1) search for pathways by which the social standing exerts its negative impact on individuals' health, and (2) present their findings to policy makers to take measures in this serious societal problem.

Key words:

inequalities in health,
social gradient,
health policy

PROBLEM

Social distribution of health

The psychology of health ascribes in recent years considerable attention not only to personality factors but also to the social context of the individual, his/her place in a social structure and his/her socio-economic status as well. The position of a person in the social hierarchy and the associated material, behavioural and psychosocial factors may be a significant determinant of his/her health and the source of socially-based inequalities in health³ to the disadvantage of subjects with a lower position in the social hierarchy.

The disadvantage has many forms and may be absolute or relative. It can include (Wilkinson and Marmot, 2003): having few family assets, having poorer education during adolescence, becoming stuck in a dead-end job or having insecure employment, living in poor housing and trying to bring up a family in difficult circumstances. Moreover, this disadvantage has a social distribution, i.e., it tends to concentrate among the same people, and its effects on health are cumulative.

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³ By the definition of the International Society for Equity in Health psychosocial inequalities in health are: "Systematic and potentially remediable differences in one or more aspects of health across populations or population groups defined socially, economically, demographically, or geographically." (ISEqH, http://www.iseqh.org/workdef_en.htm)

Despite of the great lasting attention that is paid to socio-economic inequalities in health all over the world (e.g. papers published by Whitehead, 1990; Marmot, 2005, 2004; Mackenbach, 1994, 2003 ; Mackenbach and Baker, 2002; Wilkinson and Marmot, 2003; Wilkinson and Pickett, 2006; Lynch et al., 2001, etc., reviews in Czech Šolcová and Kebza, 2000, 2002) the problem was due to political, economic and socio-historical circumstances not investigated in former Czechoslovakia. The socialist system assumed no inequalities in health care, and in social status, etc. This system was based on the model of a „class-free“ society. The income of the population did not correspond at that time to the level of education: skilled workers were paid better than university graduates. Changes towards a more balanced situation have been proceeding rather slowly. Up to the seventies, the major trends of health indicators in our country were quite favourable because gross poverty was eliminated after the end of World War II. In subsequent years due to lack of resources, health care became differentiated, up to date medical equipment, drugs etc. were not generally available. This development occurred despite the fact that the professional standard of health professionals was adequate.

During the last eighteen years, the stage of transition from socialism to democracy, attention has been focused on economics. The contemporary Czech society is now differentiating from the economic and social point of view, but also as regards health. Distorted relations between income and educational level are gradually diminishing: the correlation coefficient between these two variables in 1991 was 0.38, in 1995 0.55 and in 1997 0.6 (Večerník and Matějů, 1998).

During this period there were two basic government orientations – conservative and social democratic. None of the governments paid attention to health inequalities, the main focus being on macroeconomic problems. This is one of the reasons why health inequalities are not monitored by government authorities. Data on morbidity and mortality are related to the general population only and not according to socioeconomic criteria. So far there has been published three studies devoted to relation of mortality and health (Sobotík and Rychtaříková, 1992; Rychtaříková, 1998, 1999), however, no study was focused on relation of self-reported health and socioeconomic status.

On the other hand, the problem of inequalities in health still obviously exists around the world, and there are no common, clear and simple procedures to reduce these inequalities. New approaches are mostly based on cross-sectoral and cross-governmental strategies of co-operation, on sharing experience, and on dissemination of approved „good practices“ (Judge et al., 2006). One of interesting EU projects in this field, „Closing the Gap: Strategies for Action to tackle Health Inequalities“ is funded by European Commission within the period 2004 -2007 to fulfill two main goals: the first is assembling of recent examples of „good practices“ of that is recommended within the EU to reduce health inequalities at local, national and supranational level, the second is related to the development of national strategic initiatives in European countries in reduction of inequalities in health. Within the mentioned EU project, the Consortium of 22 European partners – institutions working in the public health area was established. The Czech Republic is represented within this Consortium by the National Institute of Public Health in Prague (www.health-inequalities.eu).

Self-reported health

Self-rated health (SRH) has been analysed as an outcome measure in various studies, partly because of ease of data collection, but also as it has been found to be a

robust health indicator, and a strong predictor of morbidity and mortality (Idler and Benyamini, 1997; review in Czech Šolcová and Kebza, 2006). The measures of self-reported health can be phrased as comparative or non-comparative (Eriksson, Unden and Elofsson, 2001). In our studies we used comparative phrasing of the question.

Measures of socio-economic status

As indicated above, education might be a less reliable indicator of socio-economic status (SES) in post-communist countries, because the traditionally Western link between education and material status is weaker. Similarly, occupation does not reflect the social class in terms that it is usual in western parts. Moreover, officially earned income might not reflect the true status of person, because of the large “informal” economy. On this score the best solution may be to consider several SES variables and to treat them separately. SES is a multidimensional construct, so the measures can reflect different underlying facets of the construct. Individual measures⁴ of SES centre on the education, occupation or income of the individual.

The submitted contribution addressed a question of inequalities in self-reported health in the Czech Republic in two subsequent studies

STUDY I

Procedure

For the field survey, the technique of a standardized guided interview of the field worker with the respondent was used. In the framework of the broader survey, the health of the respondents was addressed. The data were assembled, coded and processed by a public opinion agency „INRES“.

Sample

Data was obtained from a group of 1508 subjects obtained by random quota sampling. The group is a representative sample of the population of the Czech Republic above 15 years of age as regards sex, age and region.

The group comprises 48.0 % men and 52 % women, which is consistent with the analogous structure of the population of the CR above 15 years. The deviation from the basic group does not exceed 0.2 %, which implies that the survey is representative for the population of the CR above 15 years as regards distribution by sex.

As compared with the age distribution of the basic group, the deviation does not exceed 0.8 %. Thus the results are representative for the population of the CR above 15 years of age.

Territorial and regional classification is consistent with the territorial pattern of regions valid from 2001.

As compared with the classification of the basic group the maximal deviation is 0.3 %.

The results of the survey are thus representative for the population of the CR above 15 years of age as regards sex, age and region.

Self-rated health

The subjects were asked to assess their health by a question: “Compared with people of my age, I consider my health as very good – rather good – 50/50 – rather poor – very poor.”

Self-rated health (SRH) was employed as dependent variable.

Sex, age, region, education, family status, size of domicile, occupation, and net monthly income were used as independent variables.

⁴ There are also familial, group, regional, etc.

Results and discussion

The statistically significant association of self-rated health and age was revealed (Pearson's $r = 0.52$, $p < 0.01$). No associations were found with sex, region, family status, and size of domicile.

The distribution of responses according to education and income are displayed in the Table 1 and 2.

Table 1 Distribution of responses according to education

SRH/ education	Primary / Elementary	Vocational / apprenticeship	Secondary / high school	Tertiary / University
Very good	402	202	349	414
Rather good	337	615	714	612
50/50	402	479	343	411
Rather poor	310	181	99	64
Very poor	57	31	3	7

Kruskal-Wallis Test revealed significant differences in responses frequencies among groups differentiated by education ($H = 220.5$, $df = 3$, $p < 0.001$),

It may be stated that respondents with a lower grade of education (elementary, apprenticeship) have a tendency to evaluate their health status as poorer than respondents with a higher educational level.

Table 2 Distribution of responses according to net monthly income

SRH/net monthly income	Under 10 thousand crowns	Under 15 thousand crowns	Under 20 thousand crowns	Under 30 thousand crowns	Above 30 thousand crowns
Very good	185	354	491	557	453
Rather good	592	776	609	436	528
50/50	484	308	340	476	452
Rather poor	212	70	67	39	75
Very poor	35	0	0	0	0

Significant differences in response frequencies among groups differentiated by income (Kruskal-Wallis test: $H = 343$, $df = 4$, $p < 0.001$) were also revealed.

There was found statistically highly a significant association between the income level and evaluation of health status: the higher the respondent's income the more likely his/her subjectively perceived health status is favourable.

To determine the predictors of SRH, logistic regression (method Enter, criterion Wald) was employed using SPSS, version 7.0, software. To meet the requirements of the logistic regression the SRH was dichotomised in two parts with the cut-off score 4 (the higher the score, the better the health).

Among socio-demographic indicators, age and education were determined as predictors (Table 3). Life satisfaction, self-efficacy, and locus of control were determined as personality characteristics to predict SRH (for the results of this part see Šolcová and Kebza, 2006).

Table 3 Socioeconomic predictors of self-reported health

Variable	B	S.E.	Wald	Df	Sig	R	Exp (B)
Age	-0.04	0.00	58.83	1	0.001	-0.22	0.95
Education			14.08	3	0.002	0.08	
Vocational	-0.08	0.24	0.12	1	0.72	0.00	0.91
secondary	0.60	0.26	5.07	1	0.02	0.05	1.83
university	0.49	0.35	1.91	1	0.16	0.00	1.64

According to the values of odds ratio high school education increases SRH almost two times in comparison with primary education. Secondary / high school education appears in literature devoted to inequalities in health as a milestone point (Muller, 2002; Murray et al., 2006; Walters and Suhrcke, 2005).

STUDY II

Procedure and Sample

The data for the Study II were collected in 26 districts of the Czech Republic on a sample of 2638 respondents, 1214 women and 1424 men (ranging in age from 18 to 79 years). The research was anonymous, however the subjects completed a form devoted to their socio-demographic characteristics.

In the framework of the broadly designed study the respondents also answered the question concerning their health state. The data for present analyses were gained from 2527 (SRH and education), and 2019 (SRH and income) respondents.

Self-rated health

The item concerning self-reported health was taken over from the British Health and Lifestyle Survey (Cox, Huppert, and Whichelow, 1993). The question was as follows: “Would you say that for someone of your age, your own health in general is excellent – good – fair or poor?”

Level of education, income, gender, region, and age have been employed as independent variables, self-rated health as dependent variable. The effect of independent variables was examined by the Kruskal – Wallis test.

Results and discussion

As in the Study I, positive relation of age was revealed ($H = 270.79$, $df = 9$, $p < 0,001$). No effect of sex and region was determined. The distributions of responses according to education and income are displayed in the Tables 4 and 5.

It was revealed that positive relation between education and SRH (the favourable health assessment increases with the level of education: $H = 72, 65$, $df = 9$, $p < 0,001$), and between income and SRH (the favourable assessment of health increasing with income: $H = 50.63$, $df = 18$, $p < 0,001$).

To exclude the effect of subjects above 60 that are in the majority retired with a pension as only the income and multiple health problems, we calculated the Kruskal-Wallis once more with exclusion of persons above 60: the relation of education and income, respectively, remained highly significant ($H = 42.59$, $df = 9$, $p < 0,001$; $H = 35.60$, $df = 18$, $p = 0.007$)

To determine the predictors of SRH, logistic regression (method Enter, criterion

Table 4 Distribution of responses according to education

SRH/ education	Primary/ elementary	Vocational/ apprenticeship	Secondary/ high school	Tertiary/ University	Total
Excelent	10	33	168	68	279
Good	91	209	761	338	1399
Fair	69	129	398	147	743
Poor	26	24	43	13	106
	196	395	1370	566	2527

Table 5 Distribution of responses according to monthly net income

SRH/ income	Under 5 000	Under 10 000	Under 15 000	Under 20 000	Under 25 000	Under 30 000	Above 30 000	Total
Excelent	26	73	72	24	11	7	6	219
Good	129	472	375	132	47	19	20	1194
Fair	77	215	155	53	20	13	8	541
Poor	24	20	15	3	1	2	0	65
	256	780	617	212	79	41	34	2019

Wald) was employed using SPSS, version 7.0, software. For the purpose of the logistic regression, the SRH was dichotomised in two parts, the cut-off score being 2 (the higher the score, the better the health).

From the socio-demographic variables, age and occupation were determined as predictors (Table 6). Neuroticism, self-reported physical activity and nutritional habits were also determined as predictors in this study (for the results see Šolcová and Kebza, 2006).

Table 6 Socioeconomic predictors of self-reported health

Variable	B	S.E.	Wald	Df	Sig	R	Exp (B)
Age	-0.03	0.00	103.22	1	0.001	-0.19	0.96
Occupation			23.95	7	0.001	0.06	
Semi-skilled manual	0.25	0.56	0.20	1	0.65	0.00	1.29
Skilled manual	0.29	0.50	0.34	1	0.55	0.00	1.34
Household	0.51	0.54	0.89	1	0.34	0.00	1.67
Student	0.05	0.52	0.00	1	0.92	0.00	1.05
Other non-manual	0.73	0.49	2.21	1	0.13	0.13	2.08
Managers/ Employers	0.77	0.52	2.15	1	0.14	0.00	2.16
Professional	0.80	0.50	2.60	1	0.10	0.01	2.24

Reference group at occupation = unskilled manual.

According to the values of odds ratio, social class standing represented by occupation “professional” (physician, judge) “manager”, and “other non-manual” (technicians, clericals, civil servants) increases SRH more than two times in comparison with unskilled manual.

CONCLUSION

A close association was found between self-reported health and SES (indexed by education, occupation, and income) of respondents in two national empirical studies.

Our findings speak to the growing literature on inequalities in health, which has documented that those in lower socioeconomic positions have greater likelihood of negative health outcomes. Our research extends this tale by demonstrating that the social gradient functions also in post-communist conditions. Unfortunately the transition to democracy did not prevent the newly established system from the negative outcomes of class society.

The psychosocial pathways through which socioeconomic status is inversely associated with health are yet to be sought. Namely, the psychosocial and social factors that mediate the association between SES and health outcomes are not yet well understood.

Psychosocial inequalities in health start early in life and persist not only into old age but subsequent generations. The task for psychologists are to (1) search for pathways by which the social standing exerts its ill impact on individual’s health, and (2) present their findings to policy makers to take measures in this serious societal problem. To translate scientific evidence into policy is always a complex process, however, psychosocial inequalities are avoidable. Sadly, the recent history of our young new state health policy includes many examples of baffling inaction, even when the facts are unequivocal.

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GENRE AS A TOOL OF INTERPRETATION: THE INDIVIDUAL IN THE CONTEXT OF CULTURE¹

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ABSTRACT

This contribution constitutes theoretical and methodological reflections on research in which the authors have used the concept genre as an instrument of interpretation. The application of the term „genre“ is illustrated by three examples from the authors' research, which was focused on 1) reflections on life changes, 2) making sense of cancer, and 3) Sarah Kane's play „Psychosis at 48“ and its relation to the author's suicide. In connection with this research, we define and characterize genre as giving form to experience. We suggest a monadic model as a framework for our conception of genre. The broader framework of culture is discussed in two steps. First, genre is defined

as a type of communicational interaction in the framework of a model of transmission. Then in the shared tool model, we define genre as an instrument of mediation of the activity system. The concept of genre understood in this broad manner makes it possible to understand human experience in its individual, interactional, and socio-cultural dimensions.

Key words:

genre,
interpretation,
narrative research,
configuration,
experience,
communicational interaction,
mediation

1. INTRODUCTION

In narrative research we assume that human experience is naturally structured by means of stories. In researching the realm of human experiences one can focus on the manners of their narrative reconstruction. One may presume that precisely these manners create the meanings that one gives to one's experience. Our research is understood as „the reconstruction of the manner of giving form through narrative means“ (Chrz, 2004). Various types of analysis or categories of description may be brought to this narrative reconstruction (McAdams, 1988; Riessman, 1993; Mishler, 1995; Liebliech, Tuval-Mashiach, Zilber, 1998; Čermák, 2006). In some of these studies one requires a more global level of description (Chrz, Čermák, 2005, Chrz, Čermák, Plachá, 2006). This need reflects the fact that biographical experience – understood as narrative reconstruction – generally takes the form of a more complex configuration. The goal of the present study is a theoretical and methodological reflection on some original research of both authors, in which the concept genre was used as an instrument for understanding the complex configuration of experience.

2. GENRE AS AN INSTRUMENT FOR UNDERSTANDING THE COMPLEX CONFIGURATION OF EXPERIENCE: EXAMPLES FROM RESEARCH

The use of genre as an instrument of interpretation will first be illustrated by three examples from the authors' research, which aimed at 1) reflections on life changes,

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2) making sense of cancer, and 3) Sarah Kane's play „4.48 Psychosis“ and its relation to the author's suicide. Then we will formulate more general methodological and theoretical consequences of genre as an instrument for interpreting the understanding of people's experience.

2. 1 Genres of life stories

We first used the concept of genre while analyzing 52 autobiographical narratives of individuals in their middle years. The narratives were gathered by the method of partially structured interviews, conducted by means of the technique of the „life line“² (Tyl, 1985). The principal research questions included a) how the participants conceive the change in their life course, b) what their plans and perspectives are, c) and what they imagine to be the ideal course of life. Our attempt to understand the experiences of the participants by means of categories such as life themes, the mastery of difficulties, the emotional tone, values and beliefs, and images of the self and others (a categorical-formal analysis) finally led us to the concept of genre (a holistic-formal analysis).

At this level of analysis we identified a number of life-story genres which we initially defined as „types of constructions of experience“ (Čermák, Chrz, 2005; Chrz, Čermák, 2005). When we tried to define what creates a certain kind of story from an autobiographical narrative, we discovered that it is above all a certain manner of construing action. This aspect of life-story genre we labelled „agon“ – referring to Aristotle's *Poetics*. For example, the genre *planned gain with anticipated risk* is characterized by a specific agency which resides in a constant „management“ of life's gains and losses. A quite different aspect of „agon“ can be seen in the genre *moratorium*, in which life is understood as something that one has no control over and which one can live through without major emotions but often at the price of resignation, a feeling of absurdity, living in conformity, and failing to respond to life's challenges.

This example allows us to see another aspect, which we called „pathos“ (again inspired by Aristotle); this aspect refers to emotions and to experiencing in general. For example, in the genre *small losses—quick recovery* negative emotions are construed as something that one can „easily shake off.“ As against this, in the genre *life crisis—falling and soaring* the emotional tone is defined by depth, which is accompanied by greater vulnerability and even the possibility of depression.

The third aspect of genre, which we indicated by Aristotle's concept of „anagnorisis“ is on the level of reflection. Genres are the expression and the instrument of a certain kind of „narrative understanding“ (Ricoeur, 1985). By means of genre, actions and experiences are ordered in an understandable connection of a certain kind. This can be seen in the genre *metanoia*, in which life is construed and experienced as an intensive search for meaning and value. This results in a certain kind of „rewriting“ of one's life which consists of an intensive re-evaluation of one's past and the search for new coherence and new direction (Čermák, Chrz, 2005; Chrz, Čermák, 2005).

The results of our analyses indicate that the understanding of changes in one's life is structured by means of more complex configurations. Referring to Frye (2003) and to Murray (1989), we attempted to describe these configurations as arrange-

² Participants were instructed to draw the line representing their life course and also to mark the spot where they feel they are at the present moment, and then they were asked to enter the events which they considered to be significant in their life.

ments of three dimensions: a) attaining the desirable, b) agency, and c) the moral order. Construing life in the framework of a certain genre, i.e., as an experience of a certain „kind“, means expressing a certain mode of *agency* considering what is *desirable* on the one hand and on the other *proper* or right. The genres that we live make it possible to respond to the challenges of situations, especially to the kind that Bruner (1986) defines as „troubles.“ Genres make it possible to justify and vindicate actions taken with respect to the troubles, by which they participate in constructing and maintaining the moral order. These genres also make it possible to evaluate the goals one strives for, by which they participate in construing and reproducing that which is desirable (Chrz, Čermák, 2005).

2. 2 Understanding the experience of cancer

The concept of genre proved to be relevant in another study, in which we used the narrative approach to understand the experience of women with cancer (Chrz, Čermák, Plachá, 2006). We conducted narrative interviews with seven women with a diagnosis of breast cancer. For the purposes of analysis and interpretation we aimed first at questions of agency, influence, and responsibility. But here we discovered that if we wish to understand the participants' experiences, we have to reach a more complex level of description. For this reason, in a later phase of the analysis we focused on figures, plots, and genres by which the participants construed their experience.

At this complex level of interpretation we noticed that these holistic configurations of experience corresponded to some extent to the classical genres described in literary science (Frye, 2003) and in narrative psychology (Murray, 1989). Not with genres in the sense of a limited number of categories but with their „logic“, which we tried to formulate in earlier research (Chrz, Čermák, 2005). The principal difference in the overall shape in our narratives consisted of a varying manner of searching for the desirable and avoiding the undesirable. For example, in one of the narratives it was possible to identify an expressive configuration which resembled the letter „U“. Reaching „bottom“, where one encounters the possibility of dying („*nothing worse can happen than that I may die*“), here represents something like a „happy turning point“ leading to a positive ending. Another type of narration, characterized by an „inverted U“, begins with the sense of an unlimited ascent and flight, in which the confrontation with cancer represents the turning point that brings about an awareness of the tragic side of life. Here one reaches an awareness of limits, above all of the limitation and finiteness of time, which one must make use of actively.

Another significant aspect of these configurations is the manner and extent of agency. Narrators – as concerns reaching the desirable and avoiding the undesirable – construe their capacity to act and in this way define the sphere of their influence and responsibility. In one of the narratives we encounter an expressive construal of the sphere of influence, agency, and responsibility. The stricken person sees herself as an actor who experiences her illness as something that takes place under her direction. Since the space of this directing is at the „landscape of consciousness“, the patient understands her illness as something that she „*programmed internally, in her unconscious*“, and adds, „*it is a question of adjusting one's thought; I can help myself by thinking*“. We find quite a different agency in another woman, who sees her situation as ununderstandable and futile, in the manner of the theater of the absurd. This woman construes her experience as an absurd and futile battle with a dehumanized medical machinery. In her narration she defines a certain „sphere of

influence“ in which she has available a certain „rhetorical agency“, as someone who „can make herself heard“ by her ironic belittling and disparagement (Chrz, Čermák, Plachá, 2006).

According to Frank (1995), in recounting one's illness one introduces a certain degree of predictability into the contingencies (randomness, uncertainty, unforeseeability) of one's experience. Inspired by Frank and his typology (the narration of restitution, chaos and quest), we tried to describe the configurations of the experience of cancer by means of the dimension „predictability – contingency“. We realized at the same time that as in the „genres of life stories“ (part. 2.1) the configurations identified in this research have the character of genres shared with culture. By means of the concept of genre we found it possible to understand the socio-cultural dimension of the experience of illness. At the time we published our conclusions (Chrz, Čermák, Plachá, 2006) we did not have available an adequate conceptual apparatus and theoretical framework for realizing this possibility.

2. 3 Analysis of Sarah Kane's play „4.48 Psychosis“

The concept of genre was also shown to be a relevant instrument of interpretation in analyzing the play „4.48 Psychosis“ (Čermák, Chrz, Zábrowská, in press). The play's author, Sarah Kane, who was also called „the poet of drama“, committed suicide shortly after the successful performance of this, her fifth play at the age of 28. One naturally asks the question, why? This question is part of a broader inquiry: why do artists commit suicide more often than nonartists? Why are women, and women artists especially, more inclined toward suicide? How is this connected with the creative life? All these questions were asked in a project concerned with the question, to what degree and in what way can the texts of authors provide the key toward understanding their decision to commit suicide.

In the context of these questions we analysed the play „4.48 Psychosis“ from three different perspectives. The first perspective is the hypothesis of „regression in the service of the ego“ (Kris, 1952/2000). From this perspective the text of a play is the expression of a certain mode of handling depression and conflict by means of an expressive, poetic, and lyrical style. This kind of style „plays“ more with regressive processes, with the „creative chaos“, which can then become the source of integration, but also of disintegration and destruction. According to Čermák (2003), in the case of S. Kane this style became a kind of „vicious circle“ and paradoxically contributed to becoming bogged down, to decompensating and ultimately to self-destruction.

The second perspective (Zábrowská, in press) differs above all in a systematic refusal to refer in any way to the author's life, conflicts, or mental illness. Instead, it views the text of the play as an expression or externalization of a certain socio-cultural-historical mode of assigning meaning. The play is here understood as the attempt of the „ego“ to extricate itself from positions or manners to which it is socio-culturally-historically assigned (from the position of object, of the ill person, of the prison of rationality or alienation from the symbolic order). The means of this rebellion is the „subversive“ poetic language which disturbs the symbolic order and its alienation. But the subversive language of poetic imaginings does not lead to freeing the authentic subject (which is imprisoned by symbolism, reason, etc.), rather to the „tyranny of madness“.

The third perspective in a way synthesizes both of the preceding perspectives, and this by means of the concept of genre (Čermák, Chrz, Zábrowská, 2006). In connection with Frye's (2003) theory of genre two tendencies were identified in the

play „4.48 Psychosis“, which were called „lyrical movement“ and „ironic movement“. The basis of the lyrical movement is expressed with a certain amount of exaggeration (and in reference to Kundera) by Bělohradský (2005), according to whom „lyricism is not a literary genre but a category of life which signifies the hope for a life in which no external facts will put up resistance to our ravings“. During the course of the play there is a radical change in the meaning that is given to the world of internal visions or the „truth of the heart“, or to the „lyrical dimension“ of existence. While in the first part of the play the world of internal visions acts as an „asylum“, support, or defense against an alienating exterior, at its conclusion it becomes a source of destruction. That which at first was a refuge from the „tyranny of reason“ or the „tyranny of reality“ itself becomes a „tyranny“, that is, the „tyranny of madness“. One’s core as the antithesis of an alienating exterior is in this way unmasked as something that is part of the same „tyranny“.

The concept of unmasking is the expression of the second movement, and at the same time of the second genre, which is the genre of irony. The ironic movement can be characterized as antiromantic, in agreement with Frye (2003). While in the logic of romance life is construed as the overcoming of limitations, the elevation of the pedestrian, and the following of a vision or an ideal, the basis of the ironic perspective is belittling and disparagement, and life is construed from the point of view of disillusion, skepticism, and resignation. Čermák, Chrz, Zábrodská (in press) demonstrate that in the play there is a progressive unmasking (deconstruction) not only of the alien exterior, but also of the interior, that is, of the whole foundation of the subject, including the inside-outside boundary. The subject becomes a void, and his or her interior is the same „trap“ and „tyranny“ as his or her exterior. One can neither escape from the outside to the inside, nor in the opposite direction. In this sense Sarah Kane’s play is „hopeless“ and the subject has no other option than to „disappear“ (Čermák, Chrz, Zábrodská, in press).

In the example of this analysis the concept of genre gives us a certain key for understanding the experience of hopelessness and the motives for suicide. Genre as an instrument of interpretation can also encompass the other two perspectives, that is, interpretation from the point of view of personal conflicts and interpretation from the point of view of culturally shared meanings.

3. GENRE AS A TYPE OF CONSTRUAL OF EXPERIENCE

One can understand genres as typical shared configurations which construe human experience. One can define a genre by means of the following characteristics:

a) *Generality*: As a „genus“, genre always means something general and complex, which in particular cases can be filled with specific contents and shared elements (Bruner, 1996).

b) *Generativity*: Here genre is a „genus“ in the sense of „generating“. The concept of genre points to the constructive aspect of human experience, which can be understood as something „generated“.

c) *Integrative function*: By means of genre, experience is given a certain coherence, direction, and overall shape, in other words: experience becomes a configuration. Genres „collect“ human experience into certain templates, and may be understood as types of configuration.

d) *Sharing*: Genres are „collective“, and this in part in the sense above, i.e., in that they collect experience into a unified template, in part also in the sense that they are shared in the framework of the collectivity.

e) *Template for giving meaning*: Genre is an instrument of a certain kind of „narrative understanding“ (Ricoeur, 1984). By means of narrative construction one inserts action and experience into a certain type of understandable coherence. In this way life experiences and actions take on meaning.

f) *Horizon of expectations*: Genre can be understood as „code“, which establishes our expectations in a certain manner (Cobley, 2001). The basis of stories is on the one hand the unpredictability and disruption of expectations, on the other also the possibility of predicting and influencing beforehand. Story genres bring a certain kind of predictability to the contingencies of human life.

g) *Regime of verisimilitude*: According to Bruner (1986) our narrative modus of knowing persuades us by its „resemblance to life“. In this sense genre represents a certain „regime of verisimilitude“ or „manner of convincingness“ (Cobley, 2001). This means that genre is a specific manner by which certain types of testimony persuade us by their resemblance to life.

h) *Intentionality*: Genres construe experience by being „about something“, in other words they have their specific mode of directing attention. Beside that, various genres have varying forms of directing attention or the purposes of action. By means of genre, experience takes on directedness of a specific type (Chrząszczyńska, in press).

This discussion of genre as a „type of construal of experience“ presents a problem. It is that on the one hand we assume that genres are something shared in the social framework, and on the other we apply them here as explanatory constructs at the level of the individual. This manner of understanding the question of genres can therefore be called a **monadic model**. This model allows us to understand genres as shared means by which the individual brings a certain modicum of control and predictability into the contingencies of human life. The crucial concept here is agency, which is understood as individual action. Another possible explanatory construct is the concept of intentionality, understood as the directedness or aim of experience, which is described by means of the intentional states of the individual (Chrząszczyńska, in press).

What is not explained satisfactorily in the framework of the monadic model is how genres are shared. We are also leaving aside the question of what is the source of the „sharedness“ of genres. In the end (or rather implicitly) one may assume that the basis of this „sharedness“ are certain „anthropological constants“ of human experience, be they understood as universal human situations (Millerová, 1984), as universal „structures of action“, or as part of a universal psychic structure of mankind (Hillman, 1975).

4. THE NEED FOR A BROADER FRAMEWORK: FROM THE INDIVIDUAL TO CULTURE

In an attempt to transcend the limitations of the monadic model, we proceeded in two steps. First we broadened the model by adding the dimension of human communicational interactions, and then the dimension of shared socio-culturally based activity.

4. 1 A type of construction of experience or a type of communicational interaction?

There exist two types of expression which reflect „the genres that we live“, or more precisely put, the inadequacy of their realization. An example of the first would be

the statement: „don't be such a sad sack“. An example of the second type would be: „don't preach to me“, or „don't make fun of it“. Both kinds of statements call attention to the genre realized. How are they different? In the first statement it is a question of genres as constructions of experience. The ways of construing illness that we have discussed belong here. As against this, expressions of the second kind are genres as types of interaction or communication. Here belong some of the statements (defined by their intention) such as „complaining“, „recommending something to someone“, „protesting“.

Can one subsume both understanding of genres under the same definition? Striving for a simpler definition we can take an example from the so-called north American school of genre research, represented by the work of Miller (1984) and Bazerman (1997). Miller understands genre as „social action“, or more specifically „a type of rhetorical action“. In her conception genres are something „pragmatic“, that is, something that is given by its intention and effect. As examples she gives letters of recommendation, users' manuals, lectures, speeches, statements of defense, etc. Genres are in this sense „typical rhetorical actions based in repeated situations“ (Miller, 1984). This conception also influenced Bazerman (1997), for whom genres are „forms of life“ or „modes of being“, which give form to our experiences and interactions. In agreement with both authors we understand genre as **a typical shared configuration, which replies to the requirements of a repeated situation.**

This formulation places genres on both planes: genres as types of communicational interaction and genres as types of construction of experience. Bazerman (1997) gives „business letters of complaint“ as an example of genre as communicational interaction. During enculturation one becomes familiar with this kind of genre as a response to certain situations, that is, one learns gradually to identify events as situations of the kind that requires a letter of complaint. One can understand the conceptions of illness discussed above in the framework of this conception of genre. Illness, which interrupts the coherence of life, represent a challenge to which the ill person responds with a certain type of configuration of experience. Even here genre is the typical configuration which responds to the challenge of the situation.

This allows us to broaden the monadic model mentioned earlier. In the model it is usually a question of a) response to the challenge of a given situation. b) transmission of communication from one participant in the communication to another. This way of understanding genre can be called the **model of transmission** (Russell, Yanez, 2003). In the following passages we shall try to indicate a number of aspects (dimensions or levels) that, from this point of view, „map“ the space of „genres which (by which) we live“.

a) habitual – actual: Here we include the earlier distinction between a relatively stable construction of experience and actual and situational communicational interactions. These often appear as „two levels of the same thing“ (for example, the actual communicational interaction „complaining“, which can also be the expression of a more permanent „tendency to complain“).

b) individual – social: Genres are instruments enabling the individual to function in culture. They evolve from as much from individual as from social dynamics. The limitation of the transmission model rests in understanding this dynamic from the point of view of „transmission“ from society to the individual and back. The alternative here is the shared tool model (section 4.2).

c) *degree of formalization or institutionalization*: On the one hand, there are genres with a high degree of formalization or institutionalization, as for example „business letters of complaint“. On the other, there are genres of experiences of illness, and these to a certain extent evolve from formalized and institutionalized forms.

d) *generality – specificity*: Genre is in its nature general, but the extent of the generality can vary. Examples: thriller – conspiracy thriller, professional article – psychological article, illness as search – mental illness as enlightenment.

e) *the nature of sharing*: Genres as „shared configurations“ may be founded in participation in social and cultural practice (as in the examples of business letters of complaint), or also – at least in part – in certain „anthropological constants“ (as in attack, the search for or the reimposition of a status quo).

f) *formality – content emphasis*: Some genres, such as comedy or tragedy, are founded in highly formal structures, while others such as the westerns or science fiction are more concerned with content. One can find a similar difference in genres as communicational interactions, with the example of more formal types being different types of construction of dialogs (Cheyne, Tarulli, 1999).

g) *stability – transformation*: Genres are part of history, which they not only reflect but also help create. They are not only conventions and regimes, but also inventions that „subvert“ these regimes. The saying „yesterday’s heresy, tomorrow’s dogma“ applies to the evolution of genres.

h) *monologuing – dialoguing*: Genres not only respond to situations but also anticipate responses. In other words: they are addressable, as part of the dialogs that form human culture (Bachtin, 1986).

i) *degree of adequacy*: Genres can be variously adequate as responses to the challenges of situations. This applies as much to the genres of lived situations as to fictive genres.

j) *degree of awareness*: Different genres, whether used adequately or inadequately, may be variously conscious. Whether we lecture, attack, defend, complain, or construe our illness in the genre of „tragic heroism“ or „absurd drama“, we may or may not be aware of the construction.

4. 2 Genre as a tool of mediation of the activity system

One of the ways to enter the field of culture while researching genres is represented by the **shared tool model**. The key terms of this model is the word „mediation“, which indicates a collective activity that, by means of various instruments, changes something in the world (Vygotskij, 2004; Leontjev, 1978; Engeström, 1987). This approach is usually called activity theory (AT), or sometimes the cultural-historical activity theory (CHAT). In the 1990s, in the circle of the authors connected with the journal *Mind, Culture and Activity*, the north-american genre school (Bazerman) and activity theory (Russell) were connected. The result of this connection was a conception that enables us to understand the question of genres in a number of spheres of human activity such as education, medicine, information technology or even banking (Bazerman, Russell, 2003). From the point of view of the shared tool model genres are understood as instruments of the mediation of human activity.

The activity system is used as an appropriate and flexible unit of analysis of genre. The present authors are working with Engeström’s (1987) version of schemas of mediated activity, according to which each activity system (such as health care, concrete illnesses, education, school grades, etc.) can be described by the following seven elements: 1) subjects, 2) tools of mediation, 3) objects and mo-

tives, 4) division of labor, 5) community, 6) rules, and 7) outcomes. This seven-part schema makes it possible to identify and describe genres in the framework of various spheres of human activity. Genre is understood as an instrument functioning according to certain rules and in this way mediating certain objects and motives of the appropriate activity system.

In this way one can understand the configurations of the experience of illness described above. These configurations are constructed and maintained by means of certain cultural practices. For example, in a journal devoted to the treatment of cancer we can find the following statement: „*In two weeks she was back and could work full-time*“ (Frank, 1995). This kind of statement is a typical example of a cultural practice which constructs and maintains a „restitution narration“ of illness. This type of narration is characterized by the expectation of return to health, which is understood as the normal state. The main actor here is „medicine“, whether as doctor or as medication. The manner of action that such narration offers to the patient consists of „he took his medicine, followed the doctor’s orders, and got better“. The interruption represented by the illness is construed as something transitional and temporary. From the point of view of the activity theory, this genre of understanding illness can be understood as an instrument mediating the objects and motives of a certain activity system in the realm of health care. The person suffering from cancer construes his experience (to a certain extent) with the „intentions“ of this system. But the construal takes place simultaneously in the individual and interactional „intentions“.

5. CONCLUSION

If we wish to understand the individual in the context of culture, then we offer as an appropriate instrument of interpretation the concept of genre. This concept gives us, among others, the opportunity to think through in a new way one of the key concepts of psychology, which is intentionality. From the point of view of genre, intentionality may be understood as culturally construed intentionality. The theme of intentionality can be situated on three levels: as intentionality in the framework of the monadic model, the transmission model, and the model of shared instruments. In the case of the monadic model, the intentionality of genre can be understood as the aim or direction of experience, which can be described by means of the intentional state of the individual. From the point of view of the transmission model, the intentionality of genre is given by the character of communicational interaction, above all by the function (purpose) of this action as a response to a certain type of situation. One of the means by which one can step into the realm of culture while researching genres (and to grasp the socio-cultural extent of intentionality) is the shared tool model. In the framework of this model, intentionality is given by the object/motive of the appropriate realm of human activity, which the given genre mediates. The concept of genre makes it possible to understand intentionality in its individual, interactional, and socio-cultural dimensions.

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AUTONOMY OF CREATOR AND SOCIAL PROCESSES: OTHERNESS OR POSITIVE DEVIANCE?¹

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ABSTRACT

Interpersonal issues as an equivalent component of explanations of creativity are addressed in the study. In interviews with 10 Slovak fine arts creators, the questions concerned three topics: creator's views of creativity, reflections of personal significance of creative work, and perceptions of status of art creator. Thematic analysis revealed two dominant themes (a) implicit theories of creator containing two subthemes labeled as creator's otherness and creator's social openness, and (b) motivational dilemmas in creative work containing two

subthemes labeled as intrinsic motivation and extrinsic motivation. The findings provided insights that deviate from stereotyped views of creative person as nonconforming individual. The myth of autonomous creator is challenged, and dynamics of creativity are considered within an interplay of person, domain, and field components of creativity.

Key words:

creator's otherness,
creator's social openness,
creator's motivational dilemmas,
dynamics of creativity

In psychology of creativity, theories and studies predominate that are focused on *intrapersonal* processes in understanding and interpreting creativity. In the line of viewing creativity as the phenomenon tied to individual potentialities and achievements, autonomy is considered (at least implicitly) to be one of the essential personality traits of a creative individual. The focus on a *power of person*, one's intellectual and motivational dispositions underlying „true creativity“, is apparent in the studies of intrinsic motivation (Amabile, 1987, 1995; Hennesy, Amabile, 1989), self-determination (Sheldon, 1995), barriers of creativity (Jones, 1993), creative climate (Isaksen, Kaufman, 1991) – to name at least a few – and may indicate a persistence of the myth of lone genius (Montuori, Purser, 2006) in psychological thinking of creativity.

Following the intrapersonal views of creativity, the phenomena that are labeled by the attribute „social“ are viewed with a suspicion and considered as counterproductive or at least unfavorable for creativity. These lenses speak for a prototype of creator as the individual, who is independent of the acceptance or appraisal from others, who deviates from social norms, who defies social expectations, and who resists social pressure. To create something new, a creator needs to disregard social norms and others' expectations even at a cost of social rejection – „what is not constrained is not creative“ (Johnson-Laird, 1989, p.202). Accordingly, creativity predisposes a creative individual to being deviant „...since creativity is so strongly tied to originality, and original behavior is *always* in contradiction to norms, *any* creativity is a type of deviance...creativity is often associated with stigma...“ (Runco, 2004, p.677, italics added by D.K.). In other words, creative persons are supposed to be in an *opposition* towards majority – the strategies and

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solutions that are applied and valued. Consequently, creator is the one, whose novel ideas (products, behaviors, etc.) are disturbing, unacceptable, rejected, and so who can easily find him/herself in social isolation.

However, a paradox emerges, when both *novelty* and *value*, as defining characteristics of creativity, are taken into account. Novelty and value are endorsed by leading theorists (Sternberg, 1999; Runco, 2004; Mumford, 2003; Amabile, 1995) in their considerations of creativity „... creativity is the ability to produce work that is both novel (i.e. original, unexpected) and appropriate (i.e. adaptive, concerning task constraints)“ (Sternberg, 1999, p.3) and are generally accepted in the field. However, a paradox ensues from uncertainty of the criteria for recognizing a value of creative ideas and acts. These cannot be so objectively defined as the criteria for novelty (Frey, 1994) and are dependent on subjective judgments of others – be it experts, informal groups, etc. The judgments of value are then formed in dynamics of social processes that may work for – or against – a recognition which is awarded to creators by means of evaluative judgments attributed by referential (formal or informal) groups.

Support for the views which give emphasis on the role of social processes in creativity can be found in the studies of extrinsic motivation (Eisenberg, Shanock, 2003), evaluative creativity (Lonegran, Scott, Mumford, 2003), authentic dissent (Nemeth, Brown, Rogers, 1999) and others. These turn attention to *interpersonal* processes by stressing their importance for understanding creativity and creative person. Consequently, the phenomena with the attribute „social“ are inherent part of the processes, in which judgments of a value – importance, usefulness, or contribution of creativity – are formed.

As regards investigations of a creative individual, an importance of interpersonal issues is conceived in two different frames. First, as a *counterpart* to the conceptions of creative personality with their emphasis on a power of person: are traditional views of a creative individual in contradiction to the explanations which stress the role of interpersonal processes in understanding creativity? Such a view was explicitly posed by J. Kasof (1995) in his comprehensive study of attributional processes, which turned attention to the role of biases and attributional errors in psychological conceptualizations of creativity, which largely overlook *power of situation*, its significance for clarifying creativity. Second, as an *equivalent* component of creativity where the idea of a creative individual and his/her products as *becoming* creative in the nets of significant others (their judgments, appraisals, etc.) is induced (Csikszentmihalyi, 1989; Gardner, 1993). According to this view, creativity could hardly be recognized in a social vacuum, and so creator cannot be independent of others' perceptions and evaluations.

The studies focused on art creators, their implicit theories (Romo, Alfonso, 2003), feelings of isolation and loneliness (Dewey, Steinberg, Coulson, 1998) reveal hidden sides of creativity, its impact on creators' thinking and experiencing „creativity as a destiny“. Their findings challenge a commonly shared assumption, which at a certain extent glorifies creator's autonomy, independence of social recognition, appraisal, feedback from others, etc. In other words, the individuals, whose creativity is manifested in their art achievements may be distinctive in other ways than are expected.

The study presented is aimed at exploring fine arts creators' views, perceptions, and reflections of dynamics of creativity. More specifically, the questions concerning meaningfulness of being creative and status of art creator led the investigation. This way, value rather than novelty, meanings and connotations assigned to

creativity by Slovak art creators underlay the issues pursued in interviews. Relevance of this view in approaching creativity was evoked by considerations of J. Mareš (2001), where creativity was included as one of few positive phenomena that are investigated in psychology. It was expected that the findings would help to identify those facets of creativity that may shift an attention to areas hitherto neglected in creativity research.

METHOD

Participants

The analysis is based on semi-structured interviews with 10 Slovak painters (4 women and 6 men). All participants are active creators in a domain of fine arts, they are well-known on the basis of their individual and collective exhibitions; half of them work as lecturers/consultants at university fine arts school. Age of participants was not recorded, it approximately covered a range 30-60 years. They were contacted via e-mail and asked, to take part in psychological research on creativity. Consent forms containing information about the main purposes of research and the right of participant's privacy was provided at a start of each interview.

Procedure

Participants were interviewed individually in interviews that lasted 1 hour and were recorded by dictaphone – a small-sized apparatus which allowed an unobtrusive manner of conversation. At the start of the interview, each participant received written information about the aims of the project and ethical principles that are followed in the research. As a second step, they were informed about content of the questions they were expected to respond to within the interview.

Since the study was led by phenomenological perspective (see Smith, 1995), interview was aimed at revealing creators' experiences and reflections tied to *being* creative and *working* in a creative profession. The questions scheduled for the interview concerned three topics: (a) creator's views of creativity; (b) reflections of personal significance of creative work; (c) perceptions of status of fine arts creator. These were formulated to evoke authentic experiences, insights, and reasoning of the issues that creator feels as puzzling. The questions appeared in the interview in an arbitrary order that was the interviewee's choice.

Analysis

The recorded material was transcribed and coded by key words which labeled the issues that emerged from individual interviews. Transcripts were numbered according to the order the interview took place. The analysis proceeded by way of coding and labeling each interview transcript separately until main the issues could be identified. Having been documented by verbatim extracts, the issues were then categorized according to similarities and contrasts that were observed after comparisons were made *within* and *between* particular interviews. The categories helped to infer certain structure of dominant themes and their subthemes that were shared by interviewees as a group.

Results

Thematic analysis revealed two dominant themes, first, being classified as *implicit theories of creator* and second, as *motivational dilemmas in creative work*, with each containing two subthemes. The themes were identified in all interviews and

indicate a specific discourse, which may distinguish painters as a particular social group with its own views, attitudes, and beliefs.

In the following analysis, the dominant themes will be presented in details. The themes show complexity of the issues that creators expressed when considering „creativity in making“. Extracts that are presented, exemplify an apparent controversy if they were interpreted within a traditional theoretical framework.

Implicit theories of creator

The theme emerged from participants' reasoning of creativity which implicitly goes along with theorizing of creative personality as a distinct set of personal attributes. However, within the theme, two subthemes that can be labeled as *otherness* and *social openness*, were identified in reasoning of creative person's distinctiveness, which apparently contradict one another.

(a) Creator's otherness

Personal characteristics distinguishing creators were reported in all interviews though being related to a creative *style* of living rather than to creativity as intellectual disposition:

[...it is simply one experience and one need...qualitatively different relation to the world compared to the non-creative that is based on reductionism, on the strongly rough rational pragmatic relation to the world ...so the otherness lies in...these people did not resign...they follow the creative way of being open ...unfortunately, there is that disproportion between the enormous majority which strives for „to have“ and, on the contrary, the minority, that's why those who are creative appear as different]

[...the more an idea is strange, the more it is welcomed, i.e. in essence it is something like drug, such an habit to live this way, and now, when I am addicted – in a quotation marks – I cannot imagine I could replant myself ...I live under a glass bell of creative people, in a greenhouse world...]

Individual qualities such as curiosity, self-reflection, sensitivity, playfulness, willingness to take a risk were reported as immanent for creativity. These are perceived as an important component for bringing unexpected views, insights, etc. for fine arts production as well as for everyday creativity. At the same time, distinctiveness does not appear as inevitably benefiting a creative individual as a social being. On the contrary, social standards imposed on a creative individual in terms of expectations of normalcy are experienced as a component of milieu a creator is exposed to.

[...these people are simply distinctive in the way they observe and reevaluate, they are able to see in trivial things the whole stories... there were times when I worried about it, suffered from feeling myself as different from my classmates...I had inclined to invent the stories that were strange for others and I always wanted to build up my own world...it is not a problem to be different, but it must not be viewed as something wrong...]

[...everybody is distinctive and the best one is the one, who not only admits it, but is also able to elaborate on it, to utilize it]

Though being creative is perceived as tied to distinctiveness, creator's belongingness to his/her referential community and consequently receiving real or imagined acceptance in the group of painters seems to compensate the bothering consequences of living creatively. This way, *otherness* in terms of creator's identification with a particular social group seems to be more appropriate for interpretation of the

findings than distinctiveness which induces the idea of boundaries between creative individual and others.

(b) Creator's social openness

Compared to contents related to otherness, social openness reflects participants endeavor to communicate the meanings that they deem to transmit to their recipients. This need was clearly articulated and appears to underlie creator's ambitions to step outside a referential community and being influential in a wider context.

[...I am emitting on a certain wave and it is very important to touch those who are able to be in tune so that a resonance is attained ...this is very important and we would be false if we denied it... though there is still a number of authors who claim they are not interested in feedback from others and that they create just for themselves...this is nonsense, a resonance is significant part of a creative reflection...]

[...an art does not exist without communication, the communication and feedback are enormously important ...concerning fine arts creation, a creator offers it for an interpretation of recipients, and the creation lives its own life...similarly to lives of my children who will live at time I will be not here...however, there is still a creator's belief in elusive feedback which comes in form of recipient's own reflection of what is offered by a concrete picture as a filter]

Obviously, creating for others is perceived as a need which calls for its fulfillment. This tendency in thinking about one's distinctiveness was expressed in terms of personal meaningfulness of working creatively, which can hardly exclude its impact on others.

[...if there were not the echo from others, then it would be as if I found myself in a deaf group ...I do not create for me myself, I need someone else who would enjoy and appreciate that fantasy, because when this echo does not come for a long time, then it is inevitable to lie the question about the sense of all of this...it is normal that we want to create for others]

At first glance, otherness and social openness would appear to oppose one another. Since a creative person is commonly stereotyped as lonely runner, otherness corresponds to the stereotype while social openness does not. However, they actually oppose the traditional view of a creator rather than being mutually exclusive.

An interpretation that contradicts traditional beliefs in creator's autonomy as underlying core characteristics of creative personality, may be supported by the study of M. Romo and V. Alfonso (2003) where laymen's and painters' implicit theories of „what artist is like“ were found to be significantly different. Laymen attributed artists with the characteristics such as split personality, the one who is strange and cannot communicate with common people without difficulties, whereas painters' implicit theories were significantly different in terms of considering the need to convey one's own views of reality by creative means. Thus, laymen's implicit theories followed a wide-spread (traditional) image of creator as a socially isolated individual who is inherently disposed to be misunderstood and who also does not care about being understood by others. Obviously, such an image was not endorsed by art creators who tended to perceive themselves as searchers of contact with an audience.

Turning back to fine arts creators' views, otherness should not be interpreted as a synonym to the lack of social responsiveness. Rather, otherness may be understood as a cluster of attributes that is accompanied by orientation towards open communication through a language of figurative creativity – images and words. This way,

both otherness and social openness can be interpreted as two voices of creative person that express a constructive dilemma in the process of creative work.

Motivational dilemmas in creative work

The theme emerged from creators' reasoning of dilemmas related to their ambitions and doubts that appeared as inevitable when one is engaged in a creative profession. Similar to the first theme, two apparently opposite subthemes were identified – intrinsic and extrinsic motivation.

(a) Intrinsic motivation

Issues concerning intrinsic motives were frequently related to coping with crises, i.e., critical periods of feeling insufficiently talented, inventive, appraised, etc. Creators' reasoning concerned the individual sources of energy that (paradoxically) may be at power at times of feeling powerless.

[...the crises lies in the doubt, and this doubt ... is waving, sometimes it has such a strong energy ...this means I am sometimes not able to transmit the idea ...I feel I uncovered the seed, but the plant defies my care, I water it, look for sunny place...and nothing happens...and this is dangerous, because the doubt, the weakness is a part of that inspiration or that energy which pushes you on the one side, however, it can destroy you when you doubt up to the point you burn yourself]

[I adopted myself to this career I decided for, the career of „merchant with rain“ full of doubts where I am floating, surfing in reality... it means I calmly observe waves, the things around, and when I see a good wave I get on and utilize that wave in variety of ways...unfavorable conditions for creativity may be stimulating for creativity.]

Thus, one part of motivation was associated with internal, more or less elusive sources of dynamics that are perceived as manageable though not reliable enough to work smoothly in a favor of creator's aims, ambitions, endeavor to come with innovative view of what he/she feels as valuable to be expressed. Thus, participants tended to consider dark sides of creative processes, necessity to cope with one's own weaknesses as that part of being creative, which may work for or against their individual achievements.

(b) Extrinsic motivation

The importance of extrinsic motives was articulated in participants' considerations of social recognition, evaluation and approval from others, etc. These issues were explicitly linked to meaningfulness of creative work.

[Maybe, I need something like legitimatization or evaluation from others to move forward...because when I imagine that nobody would learn that I create I wouldn't continue to work in this direction...though it is a natural way of life for me, but a recognition is certainly a significant factor for me.]

[I am interested in others' reactions to my performance at exhibitions, i.e., those who are simply curious and interested in „what's going on“ in fine arts, however, when negative evaluation occurs, I am able to reevaluate it calmly...whether that person is particularly right or I am not, since it is motivating, inspiring for me.]

This way, participants did not plan to be independent of external evaluations and who were perceived as insignificant for creativity. On the contrary, external sources of motivation may empower them when feeling frustrated, disappointed, dispirited, etc. Moreover, feedback obtained from outside – whether in a form of

positive or negative evaluation – may serve as confirmation of one's own creative competence.

The findings do not correspond to motivational theories of creativity with their prevalent emphasis on the role of intrinsic motivation. According to these theories (Amabile, 1987; Hennessey, Amabile, 1989), external rewards inhibit self-determination, evoke the feeling of external control, and generally have detrimental effects on creative production. However, alternative views that are based on critical considerations of recent paradigms in research of creativity were suggested. Coming from experimental studies the positive effect of external rewards on creative achievements is considered (Eisenberg, Shanock, 2003; Eisenberg, Rhodes, 2001; Eisenberg, Rhodes, Cameron, 1999). At the same time, these studies give support for external rewards being influential in increasing the creative person's self-determination and feelings of one's competence.

The data obtained from fine arts creators allow considerations of creativity as being fed by intrinsic as well as extrinsic motives. Though inner dynamics running in a creative individual was perceived as an essential part of creative potentialities, the lack of external motives – be it recognition or ignorance on the part of lay recipients or experts in the domain – is experienced as frustrating. In other words, external rewards do not appear as counterproductive to creativity. On the contrary, they help creators to solve dilemmas that are unavoidable in creative professions and contribute to reflecting creativity as meaningful for others as well as for the creators themselves.

CONCLUDING DISCUSSION

Thematic analysis of interviews with Slovak fine arts creators provided insights that deviate from stereotyped views of the creative person as a nonconforming, autonomous individual who follows one's own way „at any cost“ – even at the cost of being socially isolated or misunderstood. Creators' reasoning of *what* does it mean to be creative and *why* persist in a creative profession appears to be interwoven with social motivation, i.e. of *how* creative messages may become meaningful for others – their perceptions, experiencing and interpretations of realities projected by means of figurative creativity.

At the same time, complementarity of the dominant themes revealed in interviews can be observed. Within each of the themes, the contents and meanings conveyed speak for the personal qualities of a creative individual, which correspond to psychological theories of creative personality, i.e. creator's distinctiveness and intrinsically motivated creative work. On the other hand, responsiveness to the cues from referential community as well as wider social groups was manifested and indicates a significance of social matrix for dynamics of creative work that was classified as creator's social openness and extrinsic motivation.

The findings give support for the views which take interpersonal processes as an equivalent part of dynamics of creativity into account. These are represented by theories of M. Csikszentmihalyi (1989, 1996) and H. Gardner (1989, 1993) who consider the *interplay* of a person, domain and field as a vital component for clarifying creativity. Following this perspective, individual dispositions of a creative person – be it creative thinking or personality attributes – represent just one (though significant) component of the phenomena that contribute to an emergence, identification, and recognition of creativity. Such a framework provides alternatives to investigations in the field of creativity research which reveal the

stereotypes, beliefs, and biases leading to persistence of the myth of creator as a distinctive, strange or even deviant person.

Thinking of a mythical kind is particularly manifested in the considerations of artists. As R. Schweik (1996) in his review of the texts that were focused on painters found, two conceptual metaphors „Painting as exploring“ and „The painter is a moral hero“ are dominantly used by art commentators. According to him, this tendency is increasing over the course of 20th century together with „an increasing need (on the side of commentators) to find metaphors that enable them to conceptualize modern painters as engaged in activities of significant human importance“ (ibid, p.285). In this way, endorsing personal qualities of artists tied to morality induce a discourse which connotes a power of person interpretations.

On the other hand, our findings meet the suggestions of H. Gardner (1998) who proposed following attributes of creative people: (a) *reflecting*, looking for and monitoring feedback from potential recipients of their creations, responsiveness to their insights, i.e. reflection of an impact of one's own creative products and their meaning on others; (b) *leveraging*, looking for the manners of utilizing one's own potential in the domain, which may enhance its influence, i.e., to shift aside the weak and follow strong sides to transmit/push forward one's creative ideas; and (c) *framing* one's own experience in a positive direction, accepting and admitting one's own otherness and transform it into advantage, a source of energy for developing the strategies which may help to go forward. These go along with components of the dynamic model of creativity by taking field, domain, and person processes into considerations of what contributes to becoming creative.

Within this conceptual framework, otherness and positive deviance do not appear as mutually exclusive. Rather, they convey the meanings which connote interplay of individual and interpersonal forces in dynamics of creativity, with otherness being related to creators' identification with referential minority and positive deviance ensuing from reflection of creators' endeavors, innovations, recognition of their value in the eyes of beholders. Interrelations between the two are complex and multi-faceted, however, their investigation may help to clarify the conditions, under which creators and creative achievements become to be recognized – or ignored – as valuable.

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IMPLICIT THEORIES OF MASCULINITY AND FEMININITY

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ABSTRACT

The goal of our research was to find out what mental and behavioural activities are attributed to the contemporary and ideal men and women by the students of Palacký University Olomouc. Based on the preliminary study in which 110 students participated, a list of 50 items was made; these items described characteristic feminine and masculine traits. The total number of 268 students (138 men and 130 women) studying at three various faculties of Palacký University Olomouc participated in the second part of the research. The participants rated on the 7-point scales to what extent each of the behavioural or mental activities listed among 50 items is characteristic of the contemporary and ideal men and women. It was found that the students' higher scores were ascribed to the contemporary man than to the contemporary woman in many items corresponding with the

traditional ideals of masculinity. In comparison with the contemporary man, the contemporary woman received significantly higher scores in the items corresponding with the traditional concept of femininity. Comparison between the contemporary man and woman showed much less differences than comparison between the ideal man and woman. The research participants probably perceived the combination of characteristics traditionally ascribed to men or women as more acceptable than clear-cut femininity or masculinity. They also positively evaluated general human features – e.g. tolerance, thoughtfulness, composure and sense of humour – in men as well as in women.

Key words:

implicit theories
femininity
masculinity
gender

Research into biological, psychological and social differences between men and women has a long tradition. Those researchers who have concentrated on this theme usually used the term sex differences to describe their work. For example, a classic work by Eleanor E. Maccoby and Carol N. Jacklin from 1974 is named „The Psychology of Sex Differences“. But most social researchers have distinguished between the terms „sex“ and „gender“. For example, according to Elisabeth Rider, the term sex refers to biological or physiological aspects of maleness or femaleness. Thus, a sex difference would be the anatomically different reproductive systems of males and females. Gender refers to the masculine and feminine behaviour that develop through socialization. Rider emphasizes that the terms sex and gender really are not the same. Gender denotes social, psychological or behavioural characteristics but not biological and anatomical ones (Rider, 2005, p. 21).

The term gender was introduced in 1955 by an American psychologist John Money in the article „Linguistic resources and psychodynamic theory“, which was based on research of 131 intersexual patients. Money and his colleagues found out that 95 % of patients with ambiguous genital sex had no problems in accepting the gender identity and gender role attributed to them during the early periods of their education. On the basis of this fact, Money began to talk separately about the biological aspects of sex (he kept the original English term sex for them) and separately about its psychological and social characteristics – for which he introduced a new term gender, borrowed from linguistics and philology (Pechová, 2005, p. 7).

Later Money tried to define gender as a term “which is more inclusive than sex. It is an umbrella under which all the different components of sex difference are sheltered, including the sex-genital,

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sex-erotic, and sex-procreative components” (Money, 1988, p. 52). Money’s endeavour provoked only a little reaction. For a long time, the results of his research studies from the 1950s was taken as evidence of total independence of gender on biological determinants (Pechová, 2005, p. 8).

Theories dealing with causes of the differences between men and women oscillate between two extremes. On the first extreme there are various essentialist concepts ascribing the crucial importance to the biological influences (neurological researches of male and female brains, evolutionary psychology, or psychoanalysis), on the other side, there is feminist social constructionism. Its representatives have argued that sex/gender should no longer be theorized as the difference between individuals, but rather reconceptualized as a principle of social organization, structuring power relations between the sexes (Wilkinson, 1997, p. 261).

Our work is based on a presumption that cultural expectancies and socialization practices play a crucial role in the process of forming psychological and social differences between men and women. For the purpose of our research, we used the following definitions of the basic terms: A *gender role* consists of activities that men and women engage in with different frequencies. These gender-related behaviours become part of a pattern accepted as masculine or feminine, not because of any innate reason for these differences but because they are associated with women and men. A *gender stereotype* consists of beliefs about the psychological traits and characteristics as well as the activities appropriate to men or women. Gender roles are defined by behaviour, but gender stereotypes are beliefs and attitudes about masculinity and femininity (Brannon, 1996, p. 168).

Femininity is a complex of traits and behaviour attributed to women by the given society in the given period. These characteristics are usually defined complementarily to the masculine ones. They are probably derived from the typical feminine activities related to maternity and care of offspring. The lists of these characteristics usually include patience, endurance, submission, passivity and purity (mainly sexual), providing emotional support in the private field, and asylum from the tough public world. *Masculinity* is a complex of traits and behaviour ascribed to men in the given culture. We can usually find among them aggressiveness, participation in the public sphere, and emphasis on the financial support of the family (Linková, 2002, p. 119).

In western culture, a great number of research studies focused on characteristic men’s and women’s behavioural and mental activities. In our cultural conditions research of this type was carried out by Bačová and Mikulášková (2000) and Bačová and Matejovská (2003). The respondents in these studies are usually given a list of characteristics (often bipolar ones) that, according to the existing observations and results of empirical research, constitute the content of gender stereotypes in the given culture. Then, the participants’ task is to express their agreement or disagreement with the given characteristics or evaluate it on various forms of scales (see Bačová, Mikulášková, 2000).

A certain methodological problem in these studies is the fact that a description of typical masculine or feminine characteristics does not necessarily correspond with the subjective concepts of masculinity or femininity of the research participants. We attempted to eliminate this imperfection by a preliminary study with the goal to find out behavioural and psychological activities associated with the concepts „contemporary woman“, „ideal woman“, „contemporary man“ and „ideal man“. We used the same methods as Robert Sternberg (1985) in his research of implicit theories of intelligence, creativity and wisdom. According to Sternberg, implicit theories take the form of terms, concepts, or schemas that help people categorize and explain various events, mainly in the interpersonal sphere. They help to introduce a certain meaning and order in the complex world of interpersonal relations, that help with keeping a coherent inner psychic organization. They are not usually clearly verbalized, and people are not fully conscious of them, but they still play an important role in evaluating most intrapsychic and interpersonal events (see also Plhákova, 1999; Štulíková, 2002).

METHOD

Preliminary study

Students of Palacký University Olomouc (60 women and 50 men) participated in the first part of the research, which was carried out in 2002. The data were collected by Kateřina Štulíková and Edmund Wittmann. The research was anonymous and usually took place in the students’ halls of residence in the evenings. All participants were single, their average age was 20. Half of the students answered the questions *What mental activities and behaviour do you consider to be characteristic of the contemporary woman?* and *What mental activities and behaviour do you*

consider to be characteristic of the ideal woman? The second part of the students were asked similar questions referring to the prototypes of the contemporary and ideal men.

All the participants formulated brief characteristics consisting usually of 4-8 sentences. We made a list of 50 statements describing mental activities and behaviour of the contemporary or ideal men and women, based on the content of the sentences. We chose primarily those characteristics which occurred repeatedly in the descriptions of each prototype. Fifty chosen items were listed randomly. The list of characteristics was connected with four different instructions related to the four examined types of men and women. For example:

Instruction 1. Consider to what extent each item of the list is characteristic of the contemporary woman. Mark your appraisal with a cross on the 7-point scale where point 1 stands for little characteristic, point 4 medium characteristic and point 7 very characteristic. Other points of the scale represent intergrades which you can also use for your evaluation.

The instructions for rating the characteristics of the contemporary man, ideal woman and ideal man were formulated similarly.

Experiment

The independent variables of our research were *type of instruction*, defining four different types of men and women, *gender* of the participants and the *type of their studies (faculty)*, i.e. the Faculty of Sciences, St. Cyril and Methodius Faculty of Theology or Faculty of Physical Culture of Palacký University Olomouc. The dependent variable was the content of implicit theories of mental activities and behaviour at four examined prototypes.

Research participants

There were 268 participants – 138 men and 130 women – in the experimental part of our research. The average age of the whole sample was 20.78 years; the mean age of the male students was slightly higher (21.56) than the mean age of the female students (19.95). The oldest man was 42 years old, the youngest one was 18. The oldest woman was 27, the youngest one was 18. All the research participants were single, with the exceptions of one married and one divorced man. Most respondents studied at the Faculty of Sciences of Palacký University Olomouc (in total 116 persons – 57 men and 59 women). Next 97 participants (43 men and 54 women) studied at the Faculty of Physical Culture. The smallest part of the sample consisted of the students of Faculty of Theology – in total 55 persons (38 men and 17 women).

Method

The respondents were asked to rate on the seven-point scales to what extent each of the 50 items in the list is characteristic of a) the contemporary woman, b) the ideal woman, c) the contemporary man, and d) the ideal man. Each participant evaluated only one of the four examined prototypes. The group of 70 students (35 men and 35 women) rated characteristics of the contemporary man, the other group of 67 students (35 men and 32 women) characteristics of the contemporary woman, 67 persons (36 and 31) evaluated the ideal man and 64 students (32 men and 32 women) the ideal woman.

The results were statistically processed by Milena Kršková from the Computer Centre of Palacký University Olomouc, who used the procedures of the SPSS/PC, namely the descriptive statistics, the factorial analysis of variance and the Tukey HSD test.

RESULTS

The factorial analysis of variance was used for processing the outcomes of rating. This statistics proved that final scores were strongly influenced by the independent variable *type of instruction* or (in other words) by the evaluated prototype. The influence of the „type of instruction“ was not proved only in the item *He/She is ambitious*. This means that the students attributed approximately the same ambitions to the contemporary and to the ideal women and men. At the other 49 items, a statistically significant influence of the *type of instruction* was found out on the level of significance 0.05, at most of the items on the level 0.01, or even 0.001.

The left side of the Table 1 presents the items at which we have found out significant differences between the mean ratings ascribed to the prototype of the contemporary man and the contemporary women. The right side of the table presents the significant differences between average scores attributed to the ideal man and ideal woman.

Table 1 Significant differences between the prototypes of the contemporary man (CM) and the contemporary woman (CW), the ideal man (IM) and the ideal woman (IW)

Item	CM	CW	Difference	IM	IW	Difference
He/She is indolent	4.70	3.66	1.04	-	-	-
He/She is conceited	4.83	3.52	1.31	-	-	-
He/She has a sense of family life	4.24	4.89	-0.65	-	-	-
He/She can cook well	3.07	3.97	-0.90	4.51	5.22	-0.71
He/She is nervous (emotionally labile)	3.80	4.61	-0.81	-	-	-
He/She tries to hide his/her emotions	5.20	3.97	1.23	-	-	-
He/She wants to be financially successful	6.40	5.45	0.95	-	-	-
He/She smells nice	4.29	5.16	-0.87	4.89	5.63	-0.74
He/She tells jokes of sexual content	4.90	2.85	2.05	-	-	-
He/She cares for his/her appearance	4.99	6.18	-1.19	5.52	6.27	-0.75
He/She stands up for his/her opinions	5.47	4.73	0.74	-	-	-
He/She is sentimental	3.06	4.13	-1.07	-	-	-
He/She is interested in enterprise	5.04	4.33	0.71	4.79	4.17	0.62
He/She likes talking of sports	5.93	2.77	3.16	-	-	-
He/She likes watching TV series such as Esmeralda	1.44	4.76	-3.32	-	-	-
He/She is always worried about something	3.21	4.40	-1.19	-	-	-
He/She spits on the pavement	3.50	1.37	2.13	-	-	-
He/She does not use vulgar expressions	3.06	4.42	-1.36	-	-	-
He/She sympathizes with the feminist movement	1.89	3.57	-1.68	2.13	2.77	-0.64
He/She is often dieting	1.97	5.07	-3.10	1.52	2.48	-0.96
He/She has a sense of romance	3.89	5.33	-1.44	5.16	5.95	-0.79
He/She is firm in his/her decisions	4.70	3.82	0.88	-	-	-
It is easy to make him/her cry	2.21	4.34	-2.13	1.76	2.92	-1.16
He/She is considerate	4.14	4.85	-0.71	-	-	-
He/She is interested in the world events	5.30	4.25	1.05	-	-	-
He/She has a sense of humour	5.27	4.69	0.58	-	-	-
He/She likes children	5.09	5.79	-0.70	6.03	6.58	-0.55
He/She tends to be promiscuous	4.58	3.79	0.79	-	-	-
He/She talks sententiously	4.19	3.27	0.92	-	-	-
He/She has a sense of family life	4.46	5.25	-0.79	-	-	-
He/She dislikes aggressiveness	3.70	5.69	-1.99	-	-	-
He/She can listen to others	4.17	4.99	-0.82	-	-	-
Sex is important for him/her	6.04	5.13	0.91	-	-	-
He/She gets drunk at times	5.19	3.55	1.64	-	-	-
He/She is sporty	5.31	4.25	1.06	-	-	-

The results shown in Table 1 clearly demonstrate that there are more significant differences between the prototypes of the contemporary man and woman than between the corresponding ideal types. The students attributed considerably higher scores to the *contemporary man* than to the contemporary woman at the following items: He is indolent, he is conceited, he tries to hide his emotions, he wants to be financially successful, he tells jokes of sexual content, he stands up for his opinions, he is interested in enterprise, he likes talking of sports, he spits on the pavement, he is firm in his decisions, he is interested in world events, he has a sense of humour, he tends to be promiscuous, he talks sententiously, sex is important for him, he gets drunk at times, and he is sporty.

The *contemporary woman* received significantly higher scores than the contemporary man at these items: She has a sense of family life, she can cook well, she is nervous (emotionally labile), she smells nice, she cares for her enterprise, she is sentimental, she likes watching TV series such as Esmeralda, she is always worried about something, she does not use vulgar expressions, she sympathizes with the feminist movement, she is often dieting, she has a sense of romance, it is easy to make her cry, and she can listen to others.

The prototype of the ideal man obtained significantly higher score than the ideal woman only in the item „He is interested in enterprise“. The students ascribed significantly higher ratings to the ideal woman than to the ideal man in the following items: She can cook well, she smells nice, she cares for her appearance, she sympathizes with the feminist movement, she is often dieting, she has a sense of romance, it is easy to make her cry, and she likes children.

Table 2 presents the items in which we have found significant differences between the prototypes of the contemporary and ideal man and between the contemporary and ideal woman. The results presented in the table clearly show that according to the students both the contemporary men and women are far from the ideals. The prototype of the contemporary man significantly differs from the ideal man on 36 items, and the contemporary woman differs from the ideal one on 37 items. The research participants assigned a considerably higher score to the contemporary man than to the ideal one on these characteristics: He is indolent, he is conceited, he is nervous (emotionally labile), he tries to hide his emotions, he tells jokes of sexual content, he spits on pavement, he wants to control his partner, he is over-worked, he tends to be promiscuous, he tries to resolve the dilemma of family or career, and he gets drunk at times. In comparison to the contemporary man, the ideal man received a higher score on these items: He has a sense of romance, he is considerate, he is composed, and he can listen to others. Finally, contemporary woman obtained significantly higher ratings than the ideal one especially on these items: She is nervous, she likes watching the TV series such as Esmeralda, she is always worried about something, she is often dieting, she is over-worked, and she tends to be promiscuous. Compared with the contemporary one, the ideal woman received higher scores on the items: She is tolerant, and she is composed.

We wanted to know whether the final scores in each prototype were significantly influenced by the variable *gender* of the research participants. We carried out the factorial analysis of variance including double interactions among three independent variables (*gender, type of instruction* and *faculty*).

This analysis revealed two statistically significant interactions. The first is related to the independent variables *gender* and *type of instruction*, the second one to the variables *type of instruction* and *faculty*. Initially we have analysed the interaction between *gender* and *type of instruction* by means of the analysis of variance of the final score of the men and women, and the Tukey HSD test. In the Table 3 are shown average scores of the men and women on the items with a statistically significant interaction between the variables *gender* (G) and *type of instruction* (CM, CW, IM, IW). The results clearly show that the men's and women's opinions of some characteristics differed considerably. For example, the female students ascribed a significantly higher desire for independence to the ideal woman than to the ideal man. On the other hand male students attributed lower desire for independence to the ideal woman than to the contemporary woman.

The female students also believe that the ideal woman should be significantly more self-confident than the ideal man or the contemporary woman. In the men sample, we did not find any significant difference in this item (*He/She is self-confident*). On the characteristics *He/She dislikes aggressiveness* the women attributed lower dislike to aggressiveness to the ideal woman than to the contemporary one.

The second statistically significant interaction was found between the variables *type of instruction* and *faculty*. Table 4 presents the average scores of the students of the Faculty of Science (FS), the Faculty of Theology (FT) and the Faculty of Physical Culture (FPC) of Palacký Uni-

Table 2 Significant differences between the prototypes of the contemporary man (CM) and ideal man (IM), the contemporary woman (CW) and ideal woman (IW)

Item	CM	IM	Difference	CW	IW	Difference
He/She is indolent	4.70	2.43	2.27	3.66	2.27	1.39
He/She is conceited	4.83	2.27	2.56	3.52	2.16	1.36
He/She has a sense of family life	4.24	5.61	-1.37	4.89	5.76	-0.87
He/She longs for independence	5.43	4.22	1.21	–	–	–
He/She can cook well	3.07	4.51	-1.44	3.97	5.22	-1.25
He/She is intelligent	4.90	5.99	-1.09	5.04	6.20	-1.16
He/She is nervous (emotionally labile)	3.80	1.91	1.89	4.61	1.97	2.19
He/She is self-confident	–	–	–	5.00	5.64	-0.64
He/She tries to hide his/her emotions	5.20	3.39	1.81	–	–	–
He/She wants to be financially successful	6.40	5.22	1.18	–	–	–
He/She tells jokes of sexual content	4.90	3.06	1.84	–	–	–
He/She cares for his/her appearance	4.99	5.52	-0.53	–	–	–
He/She stands up for his/her opinions	–	–	–	4.73	5.88	-1.15
He/She is sentimental	–	–	–	4.13	3.39	0.74
He/She likes talking of sports	5.93	4.57	1.36	2.78	4.14	-1.36
He/She wants to assert oneself in politics	3.59	2.91	0.68	–	–	–
He/She likes watching TV series such as Esmeralda	–	–	–	4.76	1.78	2.98
He/She is always worried about something	3.21	1.90	1.31	4.40	2.23	2.17
He/She spits on the pavement	3.50	1.67	1.83	–	–	–
He/She does not use vulgar expressions	3.06	4.37	-1.31	–	–	–
He/She sympathizes with the feminist movement	–	–	–	3.57	2.77	0.80
He/She is tolerant	4.37	5.78	-1.41	4.54	6.23	-1.69
He/She clings on details	4.03	3.34	0.69	4.51	3.38	1.13
He/She is often dieting	–	–	–	5.07	2.48	2.59
He/She has a sense of romance	3.89	5.16	-1.27	5.33	5.95	-0.62
He/She is playful	–	–	–	4.43	5.45	-1.02
He/She wants to work on behalf of the society	3.86	4.87	-1.01	4.04	5.33	-1.29
He/She is firm in his/her decisions	4.70	6.10	-1.40	3.82	5.73	-1.91
He/She wants to control his/her partner	4.37	2.43	1.94	4.30	2.89	1.41
It is easy to make him/her cry	–	–	–	4.34	2.92	1.42
He/She is considerate	4.14	6.01	-1.87	4.85	6.08	-1.23
He/She is composed	4.34	6.14	-1.70	4.09	6.14	-2.05
He/She is interested in the world events	–	–	–	4.25	5.48	1.23
He/She has a sense of humour	5.27	6.13	-0.86	4.69	6.36	-1.67

He/She likes children	5.09	6.03	-0.94	5.79	6.58	-0.79
He/She is over-worked	4.97	2.75	2.22	5.31	2.75	2.56
He/She is creative	4.77	5.64	-0.87	4.67	6.03	-1.36
He/She tends to be promiscuous	4.58	1.94	2.64	3.79	2.03	1.76
He/She talks sententiously	–	–	–	3.27	4.45	-1.18
He/She has a sense of family life	4.46	5.67	-1.21	5.25	6.02	-0.77
He/She dislikes aggressiveness	3.70	4.70	-1.00	–	–	–
He/She can listen to others	4.17	5.82	-1.65	4.99	6.25	-1.26
Sex is important for him/her	6.04	4.70	-1.34	–	–	–
He/She tries to resolve the dilemma family or career	4.33	2.72	1.61	4.64	3.20	1.44
He/She gets drunk at times	5.19	2.94	2.25	3.55	2.58	0.97
He/She endeavours to protect the weaker	4.66	5.34	-0.68	4.67	5.52	-0.85
He/She is sporty	–	–	–	4.25	5.48	-1.23

versity Olomouc on the items with statistically significant interaction between the variables *type of study-faculty* (F) and *type of instruction* (CM, CW, IM, IW).

The smallest difference was again found between the prototypes of the ideal woman and man. The only significant difference appeared on the item *He/She sympathizes with the feminist movement*, namely in the students of the FPC who attributed significantly higher ratings to the ideal woman than to the ideal man. The scores of the students of the Faculty of Theology differed on many items from the students of the two other faculties whose opinions were often similar. For example on the item *He/She is intelligent* both the students of the Faculty of Science and the Faculty of Physical Culture ascribed a higher score to the ideal man and woman than to the contemporary man and woman, while the students of the Faculty of Theology did not find any difference between these types.

INTERPRETATION AND DISCUSSION

We found that the students ascribed significantly higher scores to the contemporary man than to the contemporary woman in the characteristics *he/she wants to hide his/her emotions*, *he/she wants to be financially successful*, *he/she tells jokes of sexual content*, *he/she stands up for his/her opinions*, *he/she is interested in enterprise*, *he/she likes talking of sports*, *he/she is interested in the world events* etc. On the other hand, the contemporary woman received significantly higher scores than the contemporary man on the items *he/she has a sense of family life*, *he/she can cook well*, *he/she is nervous (emotionally labile)*, *he/she smells nice*, *he/she cares for his/her appearance*, *he/she is sentimental*, *he/she is always worried about something*, *he/she does not use vulgar expressions*, *it is easy to make him/her cry*, *he/she can listen to others* etc.

It seems evident that the above stated differences between the contemporary man and woman (with the exception of the item *he/she sympathizes with the feminist movement*) exactly copy the traditional gender stereotypes that, according to many authors, have its roots in the 19th century, in the Victorian ideals of masculinity and femininity. The Doctrine of Two Spheres is the belief that women's and men's interests diverge – that women and men have their separate areas of influence. For women, the influence is home and children, whereas men's sphere includes work and the outside world. These two spheres are different, with little overlap, forming opposites ends of one dimension (Lewin, 1984, see also Abramsová, 2005).

There is a question why the traditional gender stereotypes are still so influential, when we consider that the doctrine of two separated spheres has not been valid in the Western world for quite a long time. A substantial part of the female population is employed, they often raise only one child, and are more or less engaged in public life. In our opinion mainly men cling to these stereotypes, because they offer them many advantages, mostly in the field of the differentiation of chores, care for children, and use of spare time.

Table 3 Means of the men (M) and women (W) at the items with a significant interaction between the variables gender (G) and type of instruction (CM, CW, IM, IW)

Item	G	CM	C W	Diff.	IM	IW	Diff.	C M	IM	Diff.	C W	IW	Diff.
He/She longs for independence	M W	- -	- -	- -	- 4.09	- 5.28	- -1.19	5.60 5.26	4.33 4.09	1.27 1.17	5.09 -	4.22 -	0.87 -
He/She is intelligent	M W	- 4.63	- 5.53	- -0.90	- -	- -	- -	- 4.63	- 6.09	- 1.46	4.60 5.53	6.13 6.28	-1.53 0.75
He/She is nervous (emotionally labile)	M W	- 3.57	- 4.81	- -1.24	- -	- -	- -	4.03 3.57	2.06 1.74	1.97 1.83	4.43 4.81	2.13 1.81	2.30 3.00
He/She wants to be financially successful	M W	6.49 -	5.17 -	1.32 -	- -	- -	- -	6.49 6.31	5.11 5.84	1.38 0.47	- -	- -	- -
He/She is self-confident	M W	- -	- -	- -	5.26 -	6.15 -	-0.89 -	- -	- -	- -	5.25 -	6.15 -	-0.90 -
He/She tells jokes of sexual content	M W	5.03 4.77	2.51 3.21	2.52 1.56	- -	- -	- -	5.03 4.77	2.58 3.21	2.45 1.16	- -	- -	- -
He/She stands up for his/her opinions	M W	5.40 -	4.40 -	1.00 -	- -	- -	- -	- -	- -	- -	4.40 5.09	5.50 6.25	-1.10 -1.16
It is easy to make him/her cry	M W	2.17 2.25	4.54 4.13	-2.37 1.88	1.72 -	3.44 -	-1.72 -	- -	- -	- -	4.54 4.13	3.44 2.41	1.10 1.72
He/She is interested in world events	M W	5.43 -	3.89 -	1.54 -	- -	- -	- -	- -	- -	- -	3.89 4.66	5.03 5.94	-1.14 -1.28
He/She is creative	M W	- -	- -	- -	- -	- -	- -	- 4.49	- 5.77	- -1.28	4.34 5.03	5.88 6.19	-1.54 -1.16
He/She dislikes aggressiveness	M W	3.29 4.11	5.49 5.90	-2.20 -1.79	4.61 -	5.75 -	-1.14 -	3.29 -	4.61 -	-1.32 -	- 5.90	- 4.81	- 1.09

Table 4 Average scores of the students of three various faculties at the items with a significant interaction between the variables type of study-faculty (F) and type of instruction (CM, CW, IM, IW)

Item	F	CM	CW	Diff.	IM	IW	Diff.	CM	IM	Diff.	CW	IW	Diff.
He/She is intelligent	FS FT FPC	- - -	- - -	- - -	- - -	- - -	- - -	5.00 - 4.72	6.34 - 6.16	-1.34 - -1.44	4.89 - 5.08	6.31 - 6.32	-1.42 - -1.24
He/She wants to be financially successful	FS FT FPC	- 6.13 -	- 4.36 -	- 1.77 -	- - -	- - -	- - -	6.53 6.13 -	5.52 3.69 -	1.01 2.44 -	5.82 - -	4.83 - -	0.99 - -
He/She spits on the pavement	FS FT FPC	3.73 - 3.76	1.54 - 1.20	2.19 - 2.56	- - -	- - -	- - -	3.73 - 3.76	1.55 - 1.48	2.18 - 2.28	- - -	- - -	- - -
He/She does not use vulgar expressions	FS FT FPC	3.17 - 2.84	4.64 - 4.52	-1.47 - -1.68	- - -	- - -	- - -	- - 2.84	- - 4.16	- - -1.32	- - -	- - -	- - -
He/She sympathizes with the feminist movement	FS FT FPC	2.20 1.60 1.68	3.64 3.64 3.44	-1.44 -2.04 -1.76	- - 1.76	- - 3.27	- - -1.51	- - -	- - -	- - -	- 3.64 -	- 1.85 -	- 1.79 -
He/ She is sporty	FS FT FPC	5.23 - 5.48	4.07 - 4.60	1.16 - 0.88	- - -	- - -	- - -	- - 5.48	- - 6.44	- - -0.96	4.07 4.00 4.60	5.07 5.62 5.95	-1.00 -1.62 -1.35

But the enforcement of the anachronistic ideals of masculinity and femininity would not be possible without certain power and influence. It is obvious that men have a greater choice in establishing partner relationships than women, who sometimes take over the traditional women's role in their effort to attract a partner. Some feminists criticize women for their fluid personal identity derived mainly from men's projections and expectations; some women can even change readily in compliance with the requirements of their actual partner. But after several years of partner coexistence, under stress of many, often contradictory social demands (successful mother, passionate lover, effective worker, careful housekeeper) they are not able to fulfil the traditional women's role. Thus discrepancy between the gender stereotypes and the real social conditions may be a source of a considerable tension in partner relationships.

Important power tools are also the ideals of masculinity and femininity themselves. It is known from social psychology that members of the stereotyped group accept these stereotypes and that they identify with them. Women are not happy to be labelled as non-feminine. We think that mainly men of older generations often strongly criticize women who do not conduct themselves in accordance with the norms rooted in gender stereotypes. In our country feminism is still connected with something condemnable, usually with a certain deficiency (low attractiveness, disability to establish a long-term relationship, insufficient sexual gratification). Thus the word feminist can be used as an insult, or swearword (see Šiklová, 1999). The results of our research suggest that feminism is not largely accepted even among young people who attributed a significantly lower score in the item *He/She sympathizes with the feminist movement* to the ideal woman than to the contemporary one (see Table 2).

Comparison of the ideal man and woman revealed only nine statistically significant differences. Thus we can conclude that in the field of ideal, the differences between men and women are blurred. The students appreciate generally human characteristics, e.g. sense of humour, balance or tolerance, both in men and women. We can suppose that they described rather an ideal individual of androgynous features than an ideal man or woman. The concept of androgyny was introduced by an American psychologist Sandra Bem in the 1970s, who defines it as a combination of the best traits of men and women (Bem, 1981).

Comparison between both the contemporary man and woman and their ideal counterparts uncovered many statistically significant differences (see Table 2). These results also lead to the conclusion that the students probably perceived the combination of characteristics traditionally ascribed to men or women as more advantageous than clear-cut femininity or masculinity. The contemporary man differs from the ideal one especially in some he-mannish characteristics including: *he is conceited, he tries to hide his emotions, he tells jokes of sexual content, he spits on the pavement, he wants to control his partner* etc. In comparison to the contemporary man, the masculine ideal received higher scores in the characteristics traditionally considered to be feminine like a sense of romance, considerateness, composedness, and ability to listen to others.

Comparison of the contemporary woman with the ideal one revealed many significant differences but the discrepancy between the mean scores is not so big as in the case of the corresponding men's prototypes. The students would like women to get calmer, i.e. less nervous and over-worked. What is considered to be a desirable feature is tolerance and composedness, while the less accepted feminine characteristics are the endearment of a TV series such as *Esmeralda*, and the effort to diet. The participants also attributed a lower tendency to be promiscuous to the ideal man and woman than to the contemporary ones. Thus it seems that promiscuity is not perceived as a social ideal.

The statistical analysis of interactions between the variables discovered that the opinions of the men and women differ significantly in some items. The girls ascribed very high scores to the ideal woman (in comparison to the contemporary one, see Table 4) in the items *she is intelligent, self-confident, she stands up for her opinions, she is interested in the world events and she is creative*. At the same time they attributed a relatively low dislike to aggressiveness. Thus it seems that the female students partially identify themselves with some masculine norms and values and want to equal them.

On the basis of the analysis of interactions, we also found that the final scores of the students of three various faculties of Palacký University Olomouc differ significantly in some items. Mainly the students of the Faculty of Theology used different evaluation criteria for assessing men and women than the students of the Faculty of Science and the Faculty of Physical Culture. The significant influence of the variable *type of study* attests to the presupposition that social factors play an important role in the formation of gender stereotypes.

CONCLUSION

The results of our study lead to the conclusion that the traditional gender stereotypes still strongly influence the mental activities and behaviour of contemporary men and women or at least their social perception and evaluation. But comparing the ideal man with the ideal woman revealed fewer significant differences than comparing the contemporary man and woman. We can conclude that the research participants perceive the combination of characteristics traditionally ascribed to men or women as more appropriate than clear-cut femininity or masculinity. They also appreciate generally human traits like tolerance, considerateness, composure, and sense of humour – in men as well as in women. Nevertheless, the analysis of interactions led to the conclusion that female students partially identified themselves with some masculine values and norms and want to equal them.

The outcomes of our research as a whole confirm the hypothesis that social factors play an important role in the formation of gender stereotypes. But it cannot be disproved that some differences between men and women, mainly those related to reproduction and care for children, can be of essential nature.

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SOME CURRENT TRENDS IN RESEARCH OF INTELLIGENCE

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ABSTRACT

Some current trends in research of intelligence

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The necessity to expand the traditional research of intelligence is discussed. The dual model of pragmatics and mechanics of intelligence is failing mainly because of low ecological validity of traditional measurements of intelligence. Therefore, we are proposing to consider the reflexics of intelligence, a mental process enabling subjective representation of cognitive activity in the experiencing of an individual. Further, the structure of implicit

theories of intelligence was studied. Another subject of discussion is the analysis of intelligence through perceived attributes and constructs similar to them (creativity, wisdom). The author presents his own research findings. In conclusion, several generalizations about the advantages and limits of implicit theories are given.

Key words:

psychology,
intelligence,
wisdom,
implicit theories,
perceived attributes

INTRODUCTION

From its philosophical roots, the study of intelligence was carried out on a theoretical as well as practical level. These differences flow from two different traditions in European philosophy – the pragmatic tradition and the ontological tradition. While the applied fields of psychology are associated with the pragmatic tradition, the basic theoretical is tied to the ontological tradition. On the one hand, we are trying to analyze the basic cognitive architecture of knowledge (abstract intelligence) and, on the other hand, we are studying intelligence as a behavior regulator in real situations of everyday life. However, gradually, the long dominance of abstract intelligence (with its focus on the analysis of information processing and problem solving in artificial, laboratory conditions, represented on the outside by the IQ construct) is diminishing. In real situations of everyday life the regulatory role of intelligence is becoming quite evident (Ruisel, 1999).

A STATE OF AFFAIR

Nowadays, intensive discussions prevail concerning the substance of intelligence. Generally there are considered three different concepts of intelligence. The first one represents the classic Spearman's g factor and is based on the presumption on interindividual biological differences which correlate with the performance in mental tasks. This concept is similar to the one of fluid intelligence according to Cattell and Cattell (1963) and the type A intelligence according to Eysenck (1988). Eysenck considers g an expression of „nervous effectiveness“ while Jensen (1987) connects g with „mental quickness“.

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The second concept of intelligence is based more on adjectives than nouns. Intelligence represents the characteristics of behavior, which can be more or less intelligent. Anastasi (1986) also stated that intelligence is more an entity than quality of behavior.

The third concept of intelligence defines it as a set of abilities. Jensen (1987) tends to define intelligence as a „sum of all mental abilities“ and „a total repertory of the individual’s knowledge and abilities. The paradigm of cognitive science is based on such an understanding of intelligence. For instance, Simon and Kaplan (1989) believe that cognitive science concentrates on the „study of intelligence“ and they define intelligence as a „varied set of abilities“.

Baltes et al. (1984) proposed the so-called dual model based on two components – mechanics and pragmatics of intelligence. The mechanics of intelligence operates with the basic cognitive architecture of information processing and problem solving. Information processing takes place regardless of the content and context and it has an universal and biologically conditioned basis.

The pragmatics of intelligence integrates content and elaborations of intelligent behavior flowing from concrete knowledge. The pragmatic approach lies in the effectiveness of processing previous knowledge and using it in solving „practical life problems“. This approach broadens the traditional concepts by adding such variables to abstract or academic intelligence as reasoning, common sense, insight, wisdom, etc.

Similarly, Sternberg (1985) points to the expansion of the original concepts of intelligence by adaptive aspects of intellectual functioning of an individual. The pragmatics of intelligence includes such relatively generalized and automated knowledge systems as language and general knowledge. Furthermore, it analyzes specific knowledge systems as a result of the process of specialization (for example, professional area, relaxation, family life, etc.) Both types of knowledge systems, the general and the specific, consist of a declarative and procedural component (Anderson, 1983).

However, the dual model of pragmatics and mechanics does not completely exhaust the problems of intelligence. We think it necessary to point to other variables which significantly regulate the processing of cognitive reality by an individual.

Personal intelligence versus intelligent behavior

According to Kováč (1985), revealing the principles of psychologically regulated behavior represents the final goal of psychology – to come as close as possible to revealing the basis for psychological phenomena. As we have stated above, intelligent behavior of an individual in a real context, along with stable performance invariant (defined mainly by the mechanics of intelligence) is influenced by declarative and procedural knowledge base (pragmatics). However, we assume that, so far, not enough attention has been paid to the broad variety of subjectively represented personality-cognitive, self regulatory, metaintellect and implicit variables (reflexics). Because enough research deals with the description of mechanics and pragmatics, we focus our attention on the analysis of variables summarized under the name of reflexics.

Reflexics represents a mental process enabling subjective representation of cognitive activity in the experiencing of an individual (Ruisel, 1994). We presume that reflexics is formed on the basis of information coded from four problem areas: 1. by means of personality-cognitive regulators of performance (failure), 2. intellect self-regulation, 3. an individual’s implicit theories, 4. metaintelligence.

Personality-cognitive regulators of performance (or failure) influence coding of

information as early as the level of perception input (extra-introversion, affective reactions, social sensitivity, cognitive styles, cognitive schemata, etc.).

Intellect self-regulation identifies the qualitative and assessing aspects of experiencing the activity of the intellect. It is based on the use of information leading from the self-assessment of specific and generalized cognitive competencies (for example cognitive effectiveness).

Implicit theories supply the individual with declarative knowledge about the basis, strategies and context connections of intelligence.

Metaintelligence combined with value orientation of an individual forms the basis of the wisdom phenomenon as the knowledge of limits and conditions of real existence of man, mainly in solving „ill“ defined problems.

As we have already mentioned, reflexics represents an effort to identify those variables, which retrospectively influence the quality of intellect performance as well as the representation of cognitive activity in the experiencing of an individual. That is why we expect that along with mechanics and pragmatics, reflexics takes an important part in forming the so-called personal intelligence. We define personal intelligence as the ability of an individual to subjectively represent the objective aspects of cognitive activities in experiencing and, based on a long term concept of one's self-image, to adequately regulate behavior and choose optimal strategies of solving problem situations (Ruisel, 1994).

In the following text we will try to analyze partial variables that significantly contribute to the representation of the process of reflexics and thus of the construct of personal intelligence. Among these variables personality-cognitive regulators of performance or failure are of utmost importance. Because there is a great variety of these variables in this case, we will limit ourselves to an illustrative definition of some characteristic results, which were made in our laboratories. It concerns first of all the role of cognitive styles, affective relations, cognitive effectiveness, and the implicit theories of intelligence.

PERSONALITY-COGNITIVE REGULATORS OF PERFORMANCE (FAILURE) – COGNITIVE STYLES

To date, cognitive psychology has a growing interest in the analysis of information processing by means of cognitive styles. According to Sarmány (1994) it concerns of the study of individual preferences of the reactive system of personality which are relatively stable and are manifested in process, on which cognition is based.

In our conditions, Sarmány (1994) analyzed the relationships between partial intellect activities and cognitive styles categorization width and heuristic vs. algorithmic orientation. He found a higher level of risk decision making in individuals with heuristic orientation and wide categorization. If the practical solving of a problem situation is to be new, creative and effective it must come to terms with uncertainty and vagueness. Fixation on irrelevant aspects can interfere with reaching optimal solutions and that is why flexibility as well as the ability to take optimal risks are an important precondition for a successful practical solution to a problem and for coping with a situation.

AFFECTIVE REACTIONS – ANXIETY

Cognitive strategies, their selection and use can be influenced, to a great degree, by affective reactions of an individual. Anxious reactions in the course of a com-

plex social interaction can be very inhibiting to a socially anxious individual. Also, affective reactions can significantly affect the effectiveness of future activity. Negative assessment of one's own success creates relatively negative expectations for the future. Prokopčáková (1993) found a significant negative relationship between anxiety level and behavior control. Individuals with a higher level of anxiety usually have a more negative perception of their own cognitive competence. Based on this, we can expect that under the threat of failure people modify their problem solving process. A perceived success (enforcement) or failure (punishment) regulate cognitive process and subsequently influence future behavior and problem activities.

INTELLECT SELF-REGULATION

In the course of real existence, based on personal experiences, an individual forms generalized images of him/herself, his/her abilities, expectations, virtues and limitations. Heppner and Krauskopf (1987) define four types of self-assessments: 1. self-esteem, 2. control localization, 3. problem solving assessment, 4. self-efficacy. The beliefs are the product of concrete experiences which an individual has in a real context: the actual experience is then confronted with the content of one's own cognitive structure. These more global self-assessments in the process of problem solving interact with other variables. For example, an individual's self-assessment, be it positively or negatively generalized, can influence the extent to which he/she will search for or refuse problem situations, the extent to which he/she considers a problem to be challenge or a threat.

Under our research conditions we analyzed the self-regulatory aspects of intellect performance by means of the cognitive effectiveness construct. Cognitive effectiveness expresses objectively experienced competences of an individual in reaching optimal forms of intelligent behavior (Ruisel, 1994). The phenomenological aspects of cognitive effectiveness were studied using the „Cognitive Effectiveness Questionnaire“ (CEQ). The questionnaire is oriented toward self-assessment of behavior in a broad context of cognitive activities. Based on factor analysis we identified five factors: 1. self-trust, 2. absent-mindedness, 3. self-criticism, 4. behavioral insecurity, 5. cognitive motivation (Ruisel, 1994). The questionnaire was given to several selected groups of adolescents.

We found that individuals who, according to the CEQ score, are assessed as being cognitively more effective indicated a higher level of synthetic thinking and better retention of facts (determined according to ILP, Schmeck et al., 1977). In addition, they are more ready to accept arguments (according to the Argumentativeness Scale, Infante and Rancer, 1982). At the same time, they stated higher heuristic competence, less frequent occurrence of accompanying emotions, more significant tendency toward optimal solution of problem situations and they refused, to a greater degree, the strategies of regression and resignation (according to KFST 3, Stäudel, 1988).

These trends are in accordance with some of our other findings. For example, individuals chosen according to their extreme score in the „Problem Solving Questionnaire“ (Heppner et al., 1982) were given the „Inventory of Learning Processes“ (ILP, Schmeck et al., 1977). We found that individuals who assessed themselves as more successful problem solvers, manifested more significant tendency toward synthetic thinking and toward fact retention. Thus it stands to reason that subjective experiencing of cognitive effectiveness plays an important role in the regulation of intellect performance.

IMPLICIT THEORIES OF INTELLIGENCE

Implicit theories summarize and analyze the views and convictions of laymen about psychological phenomena as well as ways in which psychological concepts are represented. The study of implicit theories is rooted in the conceptions of Asch (1946), Bruner and Tagiuri (1954) who introduced the idea of „implicit theory of personality“, which explains how people who have limited information form integrated opinions of others. Implicit theories are important for the understanding of psychological concepts and are used as bases for explicit theories.

Creating implicit theories is not self-serving but it has an instrumental character. For instance, Sternberg et al. (1981) found that people not only form implicit theories of intelligence, creativity and wisdom but that they use them in making conclusions about themselves and others. Neisser (1979) presumes that a man can be considered to be intelligent to the extent to which his behavior corresponds to the attributes which characterize the prototype or ideal concept of intelligence. In order to obtain an adequate picture of a prototype of an intelligent individual it is necessary to analyze the laymen's perception of the representation of the very construct of intelligence, views of its biological-social conditionality, its effects and possible application in various situational contexts. As mentioned by Furnham (1992), theories can form schemata which filter and organize new material.

We can offer results of two research streams focused on the research of implicit theories. First concerns the intelligence as a perceived attribute, and second as perceived attributes of similar constructs.

INTELLIGENCE AS A PERCEIVED ATTRIBUTE

This study concentrates on knowledge structure of intelligence, i.e., on knowledge that the individual has of a given problem. In order to identify an individual's knowledge structure we compiled a list called „What I think about intelligence“ (Ruisel, 1993). It contains 22 statements about various aspects of intelligence. Some are of a theoretic character, others concern more the practical applications. Several express racist stereotypes. Opinions on the connection to other psychological functions of man or on the possible hierarchy in the system of personality were also studied. Compensation for insufficient intelligence is also considered and on possible prognostic applications. 109 subjects, mean age 21.3 years took part in the research.

Based on the analysis of the basic statistical data we can say that in the majority of cases the selected subjects either slightly agree or disagree with the given statements. Therefore, we assume that the subjects with the given study major and age do not have unequivocal knowledge. Items 21, 17, 5 and 7 are the exceptions (for further data, Ruisel, 1993). The subjects, in the majority, do not register the close relationship between intelligence and lateral preference, refuse intellectual inferiority of blacks and the hypothetical assumption that the computers will be more intelligent than people or possibly that intelligence is more important than character. On the other hand, there is a relatively high agreement with items 13, 6 and 14. That is why we presume that the subjects are convinced of the growing role of intelligence in modern times, about the intelligence of animals as well as the significance of intelligence in the activity of an entrepreneur.

On the basis of factor analysis individual items were divided into four factors (for further data Ruisel, 1993). The first factor summarized situations expressing

the functional aspects of intelligence in which the role of mental abilities in successful assertion in global human activities is generally emphasized.

The second factor comprised the assessment of success in school, the relationship to studying, memory knowledge and intelligence. The results show that the great majority of our subjects presumes a close relationship between individual cognitive functions. While the first factor overlaps to a certain degree with the problem area of practical intelligence, the second one expresses more the basic characteristics of academic intelligence (e.g. Sternberg et al., 1981). Practical intelligence is often understood as problem solving focused on tasks from everyday life with emphasis on technological or managing requirements (Dittman-Kohli and Baltes, 1990; Ruisel, 1992).

The third factor includes stereotypes about the inferiority of selected social groups. The perceptions of lower intelligence level of certain cultures have often been studied since the beginning of scientific psychology (e.g. Segall et al., 1990). The assessment of our subjects indicates a refusal of these perceptions about the presumed inferiority of selected population groups (blacks, gypsies, prototypical nations).

The fourth factor was specific for items 1, 2, 7 and 20. The greatest load was on items 1 („Men are more intelligent than women“), 2 („Intelligence is inherited“) and 20 („Lack of intelligence can fully be compensated by tenacity“). It concerns more or less items summarizing the effects of biological-social invariance.

In our total assessment we think that the perceived attribute of intelligence sees it as a rather complex, multidimensional concept, which is strongly expressed in various human activities. It has a performance character and conditions the success of man, not only in theoretical mental manipulations but also in practical activities of everyday life.

INTELLIGENCE AND PERCEIVED ATTRIBUTES OF SIMILAR CONSTRUCTS

Research of implicit theories (e.g. Sternberg, 1990) indicates that lay men have relatively stable ideas about the structure of intelligence. Spoken language in various cultures allows for relatively accurate descriptions characterizing the various forms of intelligent and unintelligent behavior as well as the prototype of an individual with certain mental functions and abilities. Intelligence, however, cannot be understood as a unitary entity. There are significant meaning variations mainly in mental representation of related but semantically different constructs such as practical, abstract, social and personal intelligence.

In our research, we have made an effort to probe into the implicit structure of the different forms of intelligence and wisdom in adolescents. The task of the subjects was to mentally form a prototype individual with a high level of abilities. These abilities were the precondition for success in everyday life situations. For this purpose we defined intelligence as an observable, phenotypical and active variable that acts as a regulator in real everyday life situations. At the same time, we expected that the evaluations will also be affected by the specifics of the sample of adolescent population.

In order to identify an individual's knowledge structure we compiled a list called „List of Mental Functions and Characteristics“. This list comprises 26 items describing various intellect functions. The majority of functions represented cognitive activities (e.g. „logical reasoning“, „generalization“ and „abstract thinking“),

some concentrated on more complex personality – social characteristics („esthetic feeling“ and „practicality“). 238 subjects, mean age 16.8 years took part in the research. Five groups of Ss received the „List of Mental Functions and Characteristics“ with different instructions (emphasizing practical, social, abstract and personality intelligence, and wisdom). The instructions (e.g. for the group assessing characteristics typical for social intelligence) were: „Here is a list of characteristics of an individual with a high social intelligence. Your task is to assess the extent to which these characteristics are necessary for successful functioning of this individual’s social intelligence. Use the key 1 – slightly, 2 – a little, 3 – fairly, 4 – quite a bit, 5 – very“.

First of all we expressed the mean values and standard deviations in the questionnaire items for the entire sample, regardless of different instructions in individual groups. Significant differences between the items were found. The highest mean values were reached by the items „self-control“, „verbal readiness“, „responsibility“, „perception“ and „long-term memory“. The lowest mean values were registered in the items „short-term memory“, „generalization“, „planning“, „esthetic feeling“ and „abstract thinking“.

Factor analysis was carried out in order to identify the more general indicators of perceived attributes. We extracted 5 factors (for further data, Ruisel, 1996).

The first factor combines functions that according to implicit assessments express noncognitive, personality modulated variables („tolerance“, „esthetic feeling“, „self-control“, „self-criticism“ and responsibility) and to a lesser degree (factor load under .5) even cognitive activities („perception“, „problem solving“ and „decision making“). The first factor can be labeled as the personality-cognitive factor.

The second factor combines six relatively related functions that significantly influence success in learning („long-term memory, „learning“, „concrete thinking“, „practicality“ and „decisiveness“) and in practical application of intellect abilities. This factor can be named as the learning factor.

The third factor comprises five items („generalization“, „comparison“, „making conclusions“, „logical reasoning“ and „short-term memory“) that basically represent the performance item of cognition and are, to a great degree, the indicator of cognitive effectiveness of an individual. That is why it can be called the cognitive effectiveness factor.

The fourth factor combines four items that are close to each other in concept („intuition“, „anticipation“, „accuracy of assessment“ and „imagination“) and that express the imagination item of intelligence. That is why this factor is labeled as the intuition factor.

The fifth factor involves items expressing mainly abstract activities („abstract thinking“, „creativity“ and „planning“). It is the abstraction factor.

The findings that we have commented on so far have dealt rather with generalized aspects of the studied intelligent prototype. At the same time, our aim was to analyze the differences between characteristics with respect to individual forms of intelligence. Based on the literature (e.g. Sternberg et al., 1981) as well as our preliminary findings (Ruisel, 1996) we expected differences between prototypes characterized as practically, abstractly, socially and personally intelligent as well as wise. We analyzed the dispersion of five characteristics with the highest mean values (for further data, Ruisel, 1996).

With respect to the prototype of a practically intelligent individual, the subjects emphasized mainly characteristics which are considered to be a precondition for a successful behavior in the real life („concrete thinking“, „verbal readiness“,

„logical reasoning“ and „problem solving“) or that possibly express a desirable regulatory action in concrete situations („self-control“).

A prototype of a successful socially intelligent individual should, according to the implicit ideas of the subjects-assessors, have a combination of cognitive („perception“, „problem solving“) and personality („self-control“, „tolerance“, „responsibility“) characteristics. We can expect that both cognitive functions significantly contribute to a successful socialization of an individual, mainly in coding and processing information.

The subjects-assessors associate abstract intelligence with „long-term memory“, „self-control“, „responsibility“, „verbal readiness“ and „decision making“. Basically, these are variables contributing to a successful adaptation of an individual to the external environment. It is relatively surprising that the refused variables include „short-term memory“, „generalization“, „comparison“, „planning“ and „esthetic feeling“. To a great extent these variables represent abstract mental activities which, however, the subjects-assessors did not consider to be important. Thus we can assume that adolescents in an given age group are not able to give a relevant representation of a prototype of an abstractly intelligent individual. The explanation may lie in the statement of Keating (1980) who said that in younger adolescents mental operations characterized as formal were not required for a competent performance.

The functions ascribed to the prototype of a wise individual represented a combination of personality („tolerance“, „anticipation“, „imagination“ and „self-control“) and cognitive („long-term memory“ and „concrete thinking“) characteristics. These are variables which represent mainly regulatory aspects of behavior which are in accordance with the defined concept of wisdom. Clayton (1982), for instance, defined wisdom as an ability which permits an individual to control human nature and which operates according to the principles of contradictions, paradox and change. Holliday and Chandler (1986) in their research of implicit theories of wisdom identified relatively related constructs: excellent understanding, assessment and communication abilities, general competence, interpersonal abilities and social unobtrusiveness. A different view was expressed by our subjects who did not expect a more significant role of „short-term memory“, „planning“, „generalization“, „making conclusions“ and „comparison“.

Personal intelligence, as seen by the subject-assessors, is represented by variables ensuring cognitive effectiveness of an individual in external conditions. It concerns the following functions: „problem solving“, „logical reasoning“, „responsibility“, „decision making“ and „concrete thinking“.

This overview makes it clear that individual prototypes are characterized chiefly by a combination of cognitive and personality characteristics. At first sight it may be surprising that there is such a low number of cognitive functions given to prototypes in which a higher number of such functions was to be expected (e.g. in case of abstract intelligence). This is probably caused by the fact that this phenomenon is not adequately represented in this particular age group (but we remind, that our research is oriented on the implicit theories, with high subjectivity).

CONCLUSION

In the presented material we have briefly discussed the development of the views on intelligence. The theories and metatheories as well as the methods in the studies of this construct were changing. None of them are complex and thus cannot

claim the right to universalness. At the best they are complementary and cover only partial aspects of such a complex phenomenon as human intelligence. We discussed the importance of reflexics of intelligence, as a source of significant interindividual differences in intelligent behavior. Reflexics represent a mental process enabling subjective representation of cognitive activity in the experiencing of an individual. This is why an intelligent person pays special attention to problems that are relevant to him/her. At the same time, he/she has the metaintellect knowledge of his/her own competences and limitations and based on self-regulating mechanisms is able to compensate for his/her own insufficiency and limitation. In this process the individual is assisted by implicit knowledge about the substance of intelligence. Implicit theories, which offer an individual declarative knowledge about the substance, strategies and context coherences of intellect abilities, are an important part of reflexics.

Adequate cognition is influenced not only by interindividual but also by intraindividual differences. Individuals are not equally impulsive or reflexive. In the same problem situations they often choose different cognitive strategies (often on account of personality-cognitive regulators such as affective reactions).

It is relatively difficult to guess which direction the research of intelligence will take in the future. However, we do expect that it will be necessary to devote much more time to the relationship between context and cognition. It will be necessary to overcome the narrow focus on „well“ but often artificially defined problems and concentrate on „ill“ defined tasks which, however, from the point of real life are much more relevant.

It is likely, that the more exact methodological approaches will require research on the „prototype“ of an intelligent individual and implicit ideas themselves. Knowledge gained in this area can prove to be very inciting mainly in the understanding of basic postulates of personal intelligence. It is precisely in the theoretical and practical specifications of this construct that we see the greatest debt of current concepts of intelligence. So far, understanding of intelligence as an isolated entity operating under abstract and artificial conditions is prevailing. It is time to replace it by an image of intelligence placed in the context of multidimensional often controversial but real and active personality (Ruisel, 2004).

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SUBSTANCE USE IN FIFTH- AND SEVENTH-GRADE BASIC SCHOOL PUPILS: REVIEW OF RESULTS OF QUASI-EXPERIMENTAL EVALUATION STUDY

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ABSTRACT

Background: The key objective of this primary prevention programme evaluation project was to compare the differences between the results of an intervention featuring a community-based primary prevention programme and the application of a so-called minimum prevention programme. The project is designed as a quasi-experimental five-year study without any randomisation in the selection of participants.

Methods: Two interrelated surveys were conducted as part of a quasi-experimental research design in order to establish the level of prevalence of substance use and the related psychosocial factors in children at the age of 11, using the ESPAD questionnaire, as well as to identify the level of their knowledge by means of a knowledge test. This survey was repeated on the same samples after two years. Apart from both questionnaires, the qualitative part of the study featured the method of semi-structured interviews and focus groups.

Sample: The sample comprised pupils from those basic schools in the Prague 6 District, which are involved in the primary prevention programme. The control group was compiled from the schools not involved in this primary prevention programme (implementing the so-called minimum preventive programme only) and selected schools located in the areas adjacent to the borders of the Prague 6 District. Purposive selection was used as a sampling

method because the existing conditions do not favour randomization. The project was joined by 25 schools from the Prague 6 District and the districts bordering on Prague 6, providing a total of 1,142 respondents, all of them seventh-grade basic school pupils.

Results: Testing carried out on both the experimental and control groups of eleven-year-old children only showed minor differences and it was verified that most of those sampled entered the study even prior to the onset of behaviour which poses higher risks in terms of substance use. Subsequently, the community-based primary prevention programme began to be delivered to the experimental group. The first retest at the age of 13 showed statistically significant differences between both groups as far as alcohol use and attitudes and knowledge are concerned. However, the difference between both samples' general populations was not significant. Yet the evidence shows that the effectiveness of the programme was very high in terms of its impact on substance use (mainly alcohol) in the children from incomplete families and those who show relationship and communication problems with at least one parent.

Key words:
evaluation,
effectiveness,
substance use,
attitudes to using,
primary prevention

1. INTRODUCTION

In the past twenty years, primary prevention programmes have seen dramatic developments. Increasingly, emphasis is placed on the evidence-based effectiveness of such programmes in the relevant target groups. This is mainly driven by the effort to prevent further funding of programmes showing insufficient effects and, conversely,

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to support those proving effective. An example of such an issue under international scrutiny may be one of the historically most costly preventive programmes, Drug Abuse Resistance Education (DARE), whose inadequate effectiveness has been convincingly proved by evaluation studies (Ennet et al., 1994). Nevertheless, the enduring efforts to retain ineffective preventive programmes resulted in the need to carry out more consistent revisions. This is the reason why extensive reviews summarising evidence on the effectiveness of preventive programmes, including specific recommendations for their deliverers (such as Böhner et al., 1994; Gardner et al., 2001; Coulkins et al., 2002, etc.) come into existence.

A specific position within the range of the most widespread drug use prevention programmes is occupied by school-based and community-based programmes. First, they are by far the most frequently used of the comprehensively designed programmes and, second, they are practical as regards availability and the physical and time resources for working with a target group. Understandably, in terms of evaluations, both school-based (Tobler et al., 2000; Coulkins et al., 2002; Ballard, 2002; Paddock, 2005) and community-based programmes (Saxe et al., 2006; Tighe and Saxe, 2006) are given particular attention, motivated by the emphasis on truly consistent and scientifically rigorous verification of the effectiveness of these preventive programmes. For the time being, the majority of the studies conducted suggest that the group of preventive programmes under consideration ranks among those that are promising and effective (Tobler, 1992) and that their effects may be examined and proved by means of standard research strategies, including the investigation of specific impacts in areas such as harm reduction (e.g. McBride et al., 2004). And it is this group of preventive programmes that the original preventive programme model conceived and developed in the Prague 6 District belongs to.

In particular, the "Project of the Evaluation of the Primary Prevention Programme in the Prague 6 District" seeks to compare the differences between the results of interventions featuring community-based and school-based primary prevention programmes and an intervention featuring the application of a so-called minimum prevention programme. The research project is designed as a quasi-experimental five-year study without any randomisation in the selection of participants (Bryman, 2001; Miovský et al., 2004a). Using a test (on fifth-grade basic school pupils) and a first (on seventh-grade basic school pupils) and a second retest (on ninth-grade basic school pupils), the effect of preventive intervention on the experimental group is compared. This evaluation of the project results (outcomes) (Kuipers, 1998; WHO, 2000) is carried out by comparing the development of risk indicators (substance use, attitudes to addictive substances and the people using them, knowledge) on a sample of pupils from basic schools in the Prague 6 District, where the control group consists of the schools which are not involved in the community-based project of the Prev-Centrum civic association (NGO) but only exercise the so-called minimum preventive programme (MŠMT, 2000).

Given the unique nature of the programme evaluated by our study, it is not feasible to use a standard experimental research design, as a programme of this type, scope, and concept is delivered by only one organisation in the Czech Republic. Therefore, any randomisation in compiling the experimental group is practically ruled out, and the authors had no alternative but to base the study on the above-mentioned quasi-experimental design (Bryman, 2001). The first testing of the sample (test) was carried out at the same time for both the experimental and control groups at the age of 11 (fifth grade of basic school) in 2003. The basic hypothesis drawn from the studies conducted on the secondary school population (Csémy et al., 2003; Miovský and Urbánek, 2001) was that at this age all the children would be approximately at the same level as far as substance use is concerned, i.e. that none of the relevant indicators would show statistically significant differences between the experimental and the control groups. The results of this first test indicate that the experimental and control groups show no significant differences, and the hypothesis that in the fifth grade, the children, to approximately the same degree, have not yet shown more distinctive signs of risky behaviour in terms of substance use was confirmed (Miovský et al., 2004a).

2. STUDY OBJECTIVES AND HYPOTHESES

The main objectives of the research project may be divided into three basic areas:

- a) To evaluate the effectiveness of the community-based primary prevention programme conducted in the Prague 6 District (using formative evaluation).

- b) To evaluate the effectiveness of the impact of the delivered prevention in terms of a comparison of the domains of knowledge, attitudes, and basic epidemiologic indicators pertaining to substance use.
- c) To evaluate the effectiveness of two types of programmes under comparison in the broader context of the operation and application of drug policy in the city's administrative district (including service networking, efficient and economic utilisation of services, and quality and ability of cooperation).

Principal hypotheses tested during the first retest and which this text also focuses on:

- a) There will be no statistically significant differences between the experimental and control groups as far as the main psychosocial characteristics under study (such as completeness of family and family income) are concerned.
- b) There will be statistically significant differences between the experimental and control groups as far as the main epidemiological substance use indicators under study are concerned.
- c) There will be statistically significant differences between the experimental and control groups as far as the domain of attitudes to substance use is concerned.

3. DATA COLLECTION AND ANALYSIS METHODS

The testing was carried out using methods which the authors believe are able to capture any conclusive differences between the experimental and control groups while making it possible to draw comparisons with the results of other studies. Both tests were anonymous, not allowing the individual pupils to be identified. This prevents the results obtained for each individual during the test and the first retest from being cross-referenced. This compromise solution was adopted in order to enhance the protection of respondents' privacy and facilitate the granting of consent from their legal representatives.¹ The entire set of instruments for each testing comprised a single testing workbook including:

- Questionnaire for measuring epidemiological indicators: the ESPAD questionnaire, slightly modified and adapted to the target population, was used to assess the basic epidemiological indicators (Csémy et al., 2003).
- Qualitative methods: focus groups and semi-structured interviews.

The data obtained were analysed by means of the statistical software STATA 9; basic description statistics and the chi-square method (Pearson χ^2) were used.

4. STUDY SAMPLE DESCRIPTION

- The total sampling method, where the population is identical with the sample, was used to compile the experimental sample (Hendl, 2005). Thus, all the pupils participating in the study primary prevention programme delivered by the Prev-Centrum civic association were included in the experimental group. This severely limited the construction and selection of the control group in that in social and environmental terms the experimental group was constituted of a relatively homogenous set of children attending schools in the Prague 6 District only. Therefore, in order to ensure that the control sample was comparable to the experimental one, all the remaining pupils of the same age attending schools in the Prague 6 District had to be included in the control sample. However, this only concerned three remaining schools and so the control sample had to be augmented by schools from the city districts which neighbour the Prague 6 District and which correspond most closely to the conditions and environment in the Prague 6 District.

In 2003, as part of the study, a total of 1,178 fifth graders (52.9% boys and 45.3% girls) were tested. In 2005 the testing was repeated on the same population of pupils, who at that time were in the seventh grade of basic school. A total of 1,142 pupils (53.1% boys and 45.8% girls) (Table 1) were questioned.

¹ Prior to the commencement of the study, each pupil had to bring to school written consent from their parents or another legal representative for his/her participation in the research study.

Table 1 Numbers of Respondents

Sample	Test with the fifth-graders					First retest with the seventh-graders				
	Pupils Total	Boys		Girls		Pupils Total	Boys		Girls	
		abs.	%	abs.	%		abs.	%	abs.	%
A	619	326	52.7	276	44.6	612	324	53.8	278	46.2
B	116	70	60.3	46	39.7	107	67	63.2	39	36.8
C	443	227	51.2	212	47.9	423	215	51.1	206	48.9
B+C	559	297	53.1	258	46.2	530	282	53.5	245	46.5
Total	1,178*	623	52.9	534	45.3	1,142**	606	53.1	523	45.8

* 21 respondents did not report their gender

** 13 respondents did not report their gender

5. RESULTS

5.1 Comparing the Experimental and Control Groups as Part of the First Retest

In 2003 the first testing was carried out with fifth-grade basic school pupils. What we were looking into was whether the experimental and control samples indicated any statistically significant differences for major indicators. We defined altogether 12 basic indicators and established that the samples differed in the prevalence of alcohol use in the previous month, lifetime prevalence of tobacco use, and of experience with drunkenness in the previous month

The same comparison as for the first test was conducted for the retest. As far as drug use is concerned (assessment of prevalence indicators), there are no statistically significant differences between the experimental and control samples for the 12 indicators we defined. A statistically significant difference was identified for the prevalence of spirits consumption in the previous month and for lifetime prevalence of the use of anabolic steroids and banned performance-enhancing substances (Table 2). In total, these two samples show statistically significant differences for 21 indicators (questions) which may be grouped under two domains.

a) Risk Factors Related to Alcohol Use

Practically, alcohol use is the most significant domain where the effectiveness of the programme under evaluation has been demonstrated. The outcomes provide relatively strong evidence of the programme's efficiency, as a difference was demonstrated at the level of prevalence indicators, as well as that of attitudes. The statistically significant difference between both groups for the indicator of „Spirits consumption in the past 30 days“ was in favour of the experimental sample. In this respect, as far as the field of primary prevention is concerned, we often encounter a reflection on the fact that alcohol use harm reduction programmes must be incorporated into standard prevention programmes. This rational approach is then projected into the evaluation conducted as part of the studies being implemented (e.g. McBride et al., 2004). What is interesting in this context is that the control sample also shows a higher level of risk for 4 other indicators. One of them is the indicator explored in the item “I would feel relaxed after consuming alcohol”, where the experimental sample scored 26.8%, as opposed to 32.9% reported for the control sample. The same results were obtained for the indicator „I would get into trouble with the police after consuming alcohol“ (21.8% and 27.4% for the experimental and the control samples, respectively), the indicator „I would feel happy after consuming alcohol“ (23.8% and 25.4% for the experimental and the

control samples, respectively) and, finally, the indicator „I would feel friendlier and more outspoken after consuming alcohol“ (34.6% and 41.0% for the experimental and the control samples, respectively). The levels of statistical significance are shown in Table 2.

Table 2 Differences between the Experimental and Control Samples as Part of the Retest

	κ^2	N	p
Spirits in the past 30 days*	12.78	1,118	0.047
Anabolic steroids or banned performance-enhancing substances (lifetime prevalence)*	11.69	1,132	0.039
I would feel relaxed after consuming alcohol.*	11.25	1,086	0.024
I would get into trouble with the police after consuming alcohol.**	14.2	1,078	0.007
I would feel happy after consuming alcohol.*	12.33	1,073	0.015
I would feel friendlier and more outspoken after consuming alcohol.*	10.34	1,074	0.035
Marijuana or hashish may be obtained on the street, in a park, etc.*	5.85	1,114	0.016
Marijuana or hashish may be obtained at a disco, in a bar, etc.**	7.22	1,114	0.007
How big is the risk of harm to people who smoke cigarettes on an occasional basis?*	12.7	1,115	0.013
How big is the risk of harm to people who use marijuana or hashish once or twice?***	13.04	1,117	0.011
How big is the risk of harm to people who smoke marijuana or hashish on an occasional basis?*	12.16	1,087	0.016
How big is the risk of harm to people who try LSD once or twice?*	11.56	1,110	0.021
How difficult is it for you to get LSD?*	12.48	1,112	0.029
How difficult is it for you to get volatile substances?*	11.7	1,107	0.039
How difficult is it for you to get anabolic steroids?***	15.74	1,113	0.008
Have you ever had a problem: accident, injury? *	10.2	1,117	0.017
Have you ever had relationship problems with your friends?*	9.99	1,107	0.019
I sometimes feel useless.**	11.61	1,087	0.009
I wish I could have more regard for myself.*	9.61	1,083	0.022
I choose the rules I want to follow.*	9.69	1,112	0.046
Nobody really knows what life will bring.*	9.62	1,112	0.047

b) Practical Information and Knowledge about Addictive Substances and the Impact of Their Use

Nowadays, the level of knowledge and information about the risks related to substance use is considered a standard component of each comprehensively conceived preventive programme (MŠMT, 2005). Naturally, the level of awareness itself does not guarantee the appropriate projection of such knowledge into attitudes and subsequent courses of conduct. Yet it is the core precondition of such a projection. Therefore, when designing any programme, it is viewed as fundamental to ensure information which is of good quality and tailored to the target group

(in terms of its form, extent, etc.) (Stel and Voordewind, 1998). The experimental sample showed statistically significant differences in 5 domains – information on different types of addictive substances: pervitin, crack, cocaine, ecstasy, and hallucinogenic mushrooms. However, this assessment is based on the pupils' own subjectively perceived knowledge. Therefore, it was a great deal more interesting to compare both groups using items which indeed test actual knowledge. In this respect, the questionnaire applied offered a series of items in which the respondents were asked to assess to what extent the use of different addictive substances may influence health. These items are relatively very sensitive to real knowledge about different substances and can reveal gaps in the actual knowledge as such, as well as, to a certain degree, „the knowledge“ derived from mass media coverage or parents' attitudes. Statistically significant differences were found in a total of 4 domains; all showed the experimental sample to be consistently superior. All these differences that were identified demonstrate better knowledge of habit-forming substances and, positively enough, the ability to apply such knowledge to more context-bound instances. Thus, the children in the experimental sample appear to differentiate better between the risks associated with different substances and are more realistic in their assessments.

The first domain involves the evaluation (using a 4-item scale) of the risk of occasional cigarette smoking, where the children from the experimental sample were correct in opting for a rather lower level of risk, while the control sample tended rather to score a higher level of risk. Similar results were found for the evaluation of the risk of trying cannabis. Here, again, children in the experimental sample were correct to prefer a reserved evaluation, stating more frequently that they consider the risk rather low. On the contrary, the children in the control group more frequently expressed the opinion that such one-off experience is associated with a high level of health (and other) risks. The same results were obtained from the evaluation of occasional (irregular) cannabis use and the evaluation of a single experience with LSD.

5.3 Comparison of Impacts in At-Risk Groups between Test and Retest

As mentioned above several times, in assessing the outcome of evaluation of the effectiveness of the programme under study the main emphasis is placed on substance use itself, i.e. on the area of the actual behaviour of the programme target group. Table 3 summarises the impacts of the programme under evaluation in relation to higher-risk groups in both samples. In conducting this analysis we sought inspiration from the literature that particularly deals with the specific nature of different factors and the way they increase the defined groups' vulnerability to habit-forming substances (Hawkins et al., 1992b; Lloyd, 1998).

Because of space limitations, we only present two risk factors here. One segment of the children reported that they grew up in an incomplete family (parents divorced or a single mother). In this group, the children show a statistically significant higher frequency of riskier alcohol behaviour for three indicators (Table 4), while the differences between both samples registered for these three indicators during the testing at the age of 11 were not statistically significant. An even more dramatic difference was found in the group of children who reported not being on good terms with their parents (or at least with one of them). These children showed surprisingly big differences between the test and the retest, where the prevalence indicator level was even reduced, and the difference between both groups is enormous (in fact, equivalent to a multiple of the value). The evaluation study provided

Table 3 Effect of Preventive Programme on Prevalence of Use in At-Risk Groups

At-Risk Group	Indicator	Sample A		Sample B+C	
		Test	Retest	Test	Retest
Incomplete family	Spirits in the past month**	14.6	20.8	17.8	34.3
	Amount of spirits on the most recent occasion – 3 glasses or more **	0.6	1.1	2.6	7.2
	Buying spirits in the past month*	3.2	6.7	6.6	12.2
Unsatisfactory relationships with at least one parent	Spirits in the past month **	25.0	17.2	24.1	43.3
	Marijuana in the past year**	12.5	12.1	3.4	21.7

* For the retest, differences are significant at the 0.05 level.

** For the retest, differences are significant at the 0.01 level.

strong evidence that the effect of the Prague 6 District programme under study is considerably higher with selected groups indicating a higher level of psychosocial risks than with the general population represented by the entire sample of children included in the study. Thus, with respect to these groups (incomplete family, bad relationships with parents, and older siblings using drugs) the programme may be regarded as extremely successful.

The validity of the hypotheses as defined had to be tested on a differentiated basis. There were no statistically significant differences between the experimental and control groups in the main psychosocial characteristics under study such as completeness of family and family income (the first hypothesis), but several areas of statistically significant differences were found as far as substance use and attitudes are concerned. These differences were considered when interpreting the results. The result of the testing of the second principal hypothesis needs to be related to the sample's subpopulations. The effect of the community-based programme under evaluation was not evident at the level of the entire sample; statistically significant differences between the experimental and control groups were only identified in two major epidemiological indicators pertaining to substance use (for alcohol). The results provided strong evidence, supported by an unexpectedly great difference, indicating that the programme had the most positive impact (proved with statistical significance for a number of usage indicators under investigation) on at-risk groups. This difference is consistent with the statistically significant differences found between the experimental and control groups in the domain of attitudes to substance use (the third hypothesis).

6. DISCUSSION

As in other European countries, the legal drugs, alcohol and tobacco, are the most commonly used drugs among the general population in the Czech Republic. In the long term, the Czech Republic has been maintaining its high alcohol consumption and, according to the GENACIS study, average daily consumption of alcohol reaches 16.6 g, peaking in the age range from 35 to 44 (Lejčková et al., 2005). Experience with alcohol was reported by almost 2/3 of the respondents up to 12 years of age, and 90% of the respondents up to the age of 14 had had this experience. The ESPAD study (Csémy et al., 2006) reveals that a total of 98.4% of 16-year-olds have had experience of alcohol, out of which a mere 4.3% of young people drink alcohol only rarely. This implies that, when planning preventive activities, it is essential to specifically take into account this low age at which the first experience with alcohol takes place (prior to the age of 12), as well as the fact that children

usually try alcohol for the first time at home in their parents' presence. In comparison to other studies, the figures on lifetime alcohol use prevalence pertaining to the respondents included in this study are higher. The results of the study conducted in 2002 (N=725) indicate that in Prague a total of 91.9% of respondents aged 11-16 had had experience with alcohol (Ševčík, 2002). Both results are difficult to compare, given the fact that the results of the Ševčík (2002) study represents the 11-16 age group, where the 14-year-olds only constitute 28.4% of the sample.

The most common and frequent alcoholic drink consumed at the age of 14 seems to be beer, followed by wine and spirits (Blatný et al., 2004). However, the ESPAD study (Csémy et al., 2006) shows that at the age of 16 spirits consumption takes second place. As for high-risk forms of alcohol consumption, i.e. consuming an excessive amount of alcohol in one drinking episode (5 or more glasses of alcohol), and experience of drunkenness, approximately 10% (also Blatný et al., 2004) and nearly one fourth of the 14-year-old respondents (also Ševčík, 2002) have experienced „binge drinking“ and drunkenness, respectively, in the past month. At the age of sixteen 47.2% and 39.5% of the population will have had experience of excessive consumption of alcohol and drunkenness, respectively. Particularly from this perspective, the results (see Tables 3) appear positive. On one hand, it is obvious that while the experimental group did not achieve a positive outcome in relation to alcohol use in general terms, the evidence shows statistically significant differentiation in preferences concerning different types of alcohol – i.e. the experimental group preferring low-percentage alcohol (involving fewer health risks) to high-percentage alcohol (involving more health risks), which represents a harm reduction component highly valued in terms of prevention (McBride et al., 2004).

An important outcome of the study is the finding of statistically significant differences between the experimental and control groups in the domain of the related psychosocial factors. It is a set of indicators which, as a whole, may be unequivocally interpreted as risky, and the vast majority of them (5 of 6) are to the disadvantage of the control group. The foursome of risk indicators to the detriment of the control group comprise the answers to the items inquiring about the respondent having had any major problems such as an accident or injury or relationship problems with friends in association with addictive substances. Furthermore, the children in the control group scored more highly in questions inquiring into whether they sometimes felt useless, whether they wished they could have more regard for themselves, and whether they agreed to the statement that they choose the rules they want to follow. These findings correspond to the evidence established by Krch et al. (2004) in the context of cannabis use.

Investigation into the constellations of risk and protective factors within the context of primary prevention is a major topic in prevention research. Thanks to extensive metaanalyses of the results from these studies (e.g. Hawkins et al., 1992a; Canning et al., 2003), evaluation projects may verify the effectiveness of different programmes for target groups of various levels of risk. One key issue is the assessment of a range of the effects preventive programmes have on different at-risk groups and of the differences between the impacts they have on the general population and these at-risk groups. It should be noted that without a thorough understanding of the interaction between different risk and protective factors it is very difficult to project these results into the prevention strategies under development. Therefore, as far as the presented evaluation study is concerned, we sought inspiration from the literature that particularly deals with the specific nature of different factors and the way they increase the defined groups' vulnerability to habit-forming substances (e.g. Hawkins et al., 1992b; Lloyd, 1998). In addition, the evaluation study provided strong evidence that the effect of the Prague 6 District programme under study is considerably higher with selected at-risk groups than with the general population represented by the entire sample of children included in the study. Thus, with respect to these groups (incomplete family, bad relationships with parents, and older siblings using drugs), the programme may be regarded as extremely successful.

7. CONCLUSION

The testing carried out on both the experimental and control samples of 11-year-olds only revealed small differences, and, in accordance with the literature (Csémy et al., 2003; Miovský and Urbánek, 2001), verified the hypothesis that most of those sampled enter the study before the onset of more risky behaviour in terms of addictive substances. Subsequently, a community-based prevention programme began to be delivered to the experimental group. The first retest at the age of 13

showed statistically significant differences between both groups in the domains of alcohol use and attitudes to and knowledge of habit-forming substances. However, the difference for both samples' general populations was not very significant, although the outcome of them being steered towards alcohol use harm reduction is clearly positive. Yet, the evidence available shows that the investigational community-based programme is highly effective in terms of its impact on substance use (mainly alcohol) in the children from incomplete families and those who show relationship and communication problems with at least one parent. The experimental sample even showed a subtle improvement, while considerable deterioration was registered for the control sample in this respect.

The recent state-of-the-art works in this field, particularly, tend to be more cautious, especially towards the pervading and far too optimistic previous standpoints. Both the primary studies and reviews addressing this field (e.g. Baker et al., 1998; Paddock, 2005) challenge the wide range of different policy-driven prevention programmes receiving generous funding from national governments and point out a number of methodological pitfalls associated with the evaluation of prevention programmes and, sadly, with a still-limited evidence base that could be used to prove „what works“. Some of the recent metaanalyses of the outcomes of preventive as well as prevention-treatment programmes implemented in the USA (e.g. Saxe et al., 2006; Tighe and Saxe, 2006 and many others) send even more uncompromising messages. Other extensive evaluations (including Tobler, 1992; Tobler and Straton, 1997; and Tobler et al., 2000) use more caution in their conclusions, and, given the context of the reported results and comparison of such results to other present-day projects, it seems that at this point radical scepticism regarding preventive programmes would be hasty and strongly reductive.

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GRAMMAR SCHOOL PUPILS' CAREER-RELATED DECISION-MAKING DIFFICULTIES¹

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ABSTRACT

The present study examined the construct of career-related decision-making difficulties among 1,488 Slovak adolescents choosing fields of study in institutions of higher education (19 years). A new instrument *Career Choosing Difficulties Questionnaire* aiming to measure career decision-making difficulties was used in this study. For the participants who had made a career decision, the seven

major categories of problems emerged: Lack of Motivation, Lack of Information about Schools, Lack of Knowledge about the Process of Career Decision Making, Lack of Information about Occupations and Self, General Indecisiveness, Internal Conflicts, and External Conflicts.

Key words:

career decision making difficulties,
career problems

Pupils with the career-related decision-making difficulties account for the predominance of clients of guidance offices operating in educational system in the Czech and Slovak Republic. In other cultures it is the same. Friedman (1991) investigated types of decisions with which Israeli adolescents (9th and 11th graders) are concerned and found that problems involving educational issues concern adolescents most (43% of the problems revolved around studies and career). Career development has been the fundamental purpose and a primary focus for the services that school counselors offer in USA (Akos et al., 2004).

To help pupils in making career decisions, school counsellors have to locate the difficulties faced by adolescents and provide them with guidance on how to overcome, or at least minimize, these difficulties. The reliable and valid assessment of career decision problems is counselling thus an important issue in the field of career counselling.

CAREER DECISION PROBLEMS CONCEPTUALIZATION

There is no widely accepted definition of the domain of career decision problems faced by adolescents and young adults in their career development. Most authors conceptualise them as difficulties (e.g., career indecision) in career development (Gati et al., 1996, 2001; Akos et al., 2004), but also as psychological blocks to career decision making (Larson et al., 1994) and career problems (Busacca, 2002). Akos et al. (2004) also suggest to conceptualize student career decision making as the career readiness types, which are homogeneous subgroups of students who display similar patterns of needs.

I. Gati et al. (1996, 2001) conceptualize the problem as career-related decision-making difficulties faced by students and others before or during the actual process

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of decision making. They proposed hierarchical taxonomy, in which difficulties are divided into three major categories.

The first major category, Lack of Readiness, includes three categories of difficulties that may arise before the beginning of the career decision-making process: (a) lack of motivation to engage in the career decision-making process; (b) general indecisiveness concerning all types of decisions; and (c) dysfunctional beliefs (e.g., irrational expectations) about the process of career decision making. The two other major difficulty categories, Lack of Information and Inconsistent Information, include categories of difficulties that may arise during the actual career decision making process.

Lack of Information includes four categories of difficulties: (a) lack of knowledge about the steps involved in the process, (b) lack of information about the self, (c) lack of information about the various alternatives (i.e., occupations), and (d) lack of information about the ways of obtaining additional information.

The major category of Inconsistent Information includes three categories of difficulty: (a) unreliable information, that is, difficulties related to unreliable or contradictory information (e.g., above average high school grades, but a low SAT score); (b) internal conflicts, that is, conflicts within the individual, such as contradictory preferences or difficulties concerning the need to compromise; and (c) external conflicts, that is, conflicts involving the influence of significant others (Gati et al., 1996). Cluster analyses of American and Israeli participants supported the hypothesized taxonomic structure of career decision-making difficulties (Gati et al., 1996).

Researchers examining the constructs and validity of this taxonomy have found empirical support in a variety of populations, such as counselees versus career counsellors (Gati et al., 2000), people taking Internet-based versus paper-and-pencil career assessments (Gati, Saka, 2001), cross-national comparisons (Gati et al., 1996; Mau, 2001), and high school (Gati, Saka, 2001; and university students (Osipow, Gati, 1998). Recently Tien (2005) tested this classification system for career decision difficulties of college students in Chinese culture (Taiwan). The results indicated that the three-group classification system for career decision-making difficulties was generally supported.

However taxonomy has the limitations as pointed out by Kelly and Lee (2002). The authors have focused exclusively on the cognitive aspects of career decision problems and opted against measurement of affective and identity aspects of these problems. The most obvious omission is anxiety, which has been widely discussed in the indecision literature. This omission is significant because anxiety can affect readiness for counselling and the processing of information regarding aspects of self and career options.

CAREER DECISION PROBLEMS MEASUREMENT

The Career Decision Scale (CDS) (Osipow, 1994) is representative of the first generation of indecision measures. The CDS was not based on a theory. Rather, Osipow and his colleagues used their clinical experience to identify sources of indecision; they designed the CDS for use as a diagnostic tool for determining differential treatments (Osipow, 1991). The CDS has been widely applied as a research instrument and is particularly effective in reflecting treatment changes. CDS can be used to identify two dimensions of indecision: Certainty and Indecision.

The Career Factors Inventory (CFI) (Chartrand, Robbins, 1997) is the second generation indecision measure. The CFI is a diagnostic tool to help counsellors

identify in four career decision problems – Need for Career Information, Need for Self-Knowledge, Career Choice Anxiety, and General Indecisiveness. The CFI can be used by counsellors to focus counselling on particular concerns or on a combination of the four (Chartrand, Robbins, 1997).

However the CFI as well as CDS have a limitation. They do not appear to represent all relevant career decision problems. For example, they do not measure the barriers to career choice. The effectiveness of these diagnostic tools is limited if they do not represent the entire domain of decision problems.

I. Gati et al. (1996) developed *The Career Decision-Making Difficulties Questionnaire* (CDMDQ), in which the various possible difficulties in their theoretical model were represented by respective statements. The CDMDQ is the third-generation approach to measuring career decision problems. In CDMDQ difficulties represented by 44 items are divided into 10 scales, which represent the 10 theoretical categories of difficulties mentioned above.

K. R. Kelly and W. Lee (2002) conducted a factor analysis of the CDS, CFI, and CDDQ and compared the factors derived from these three measures to those derived from their logical analysis of previous factor analytic studies. Six factors emerged from their study: Lack of Information, Need for Information, Trait Indecision, Disagreement with Others, Identity Diffusion, and Choice Anxiety.

Although three instruments mentioned above (CDS, CFI, and CDMDQ), taken together, represent all of the career decision problems that have been identified in the literature, one limitation is common to all of them. Each of them appears to underrepresent the domain of career decision problems. No single measure incorporates all of the salient decision problems. Underrepresentation of the career indecision domain is a serious impediment to theory building. Further efforts are needed to fully explore the domain of career decision problems.

The goal of this study was to characterize and categorize the different types of career-related decision-making difficulties faced by Slovak adolescents.

INSTRUMENT

An instrument used in this study was developed specially for the purpose of analyzing difficulties in choosing a career. The questionnaire, titled *Career Choosing Difficulties Questionnaire* (CCDQ), consists of 30 items aiming to measure career decision-making difficulties. The participants were asked to rate the degree to which each statement described them on a 5-point scale (1 = does not describe me at all to 5 = describes me well). Items correspond to possible difficulties in career decision making. 28 items concern difficulties often experienced by clients of career counselling as we have known them from our own experience as counselling psychologists. The rest of the two items was adopted from the CDMDQ (Gati et al., 1996). Only one representative item was used for each difficulty (e.g., „*Often a fear of failure prevent me to decide.*”).

Preliminary Analysis of the CCDQ

We asked 36 grammar school pupils to complete the questionnaire. Their responses were analyzed to ensure that psychometric properties of the questionnaire were satisfactory. Specifically, we first computed the mean and standard deviation of the responses for each item to ensure differentiation. Then we assessed reliability of the whole questionnaire (Cronbach's α). Finally, using retest data from the same group of participants, we examined a 2-week retest reliability of the whole questionnaire. Some of the items were revised on the basis of these analyses.

This preliminary investigation revealed adequate test-retest reliability (.81) and internal consistency (.83) of the CCDQ .

SAMPLE

The sample in this study was selected from grammar schools pupils of all whole Slovakia by proportional representation. In February 2006, 1679 pupils (school year 4, age median and mode = 19) of 59 grammar schools from all regions of Slovakia participated in a study of career orientation supported by a grant from the European Social Fund. 1488 (88.6%) participants completed whole the questionnaire and were included in our analysis.

PROCEDURE

The pupils responded to the questionnaires during a class. The questionnaires were handed out to the pupils by the school counsellor or by one of the teachers, who was given the relevant instructions and explanation regarding the questionnaires purposes and importance. The questionnaires were distributed and the pupils' questions, if any, were answered. No time limitation was given; the time taken to fill in the questionnaire varied from 20 to 30 minutes.

First, we computed the mean and standard deviation of each of the 30 items. Next, we computed Cronbach's alpha reliability of the whole questionnaire, and then, using the Pearson product-moment correlation, we computed the intercorrelations among all the 30 items scores. Finally, to examine the empirical structure of the 30 questionnaire items, we used a factor analysis.

RESULTS

Because there were no systematic or meaningful differences between boys and girls in the overall difficulties scores, we report only the aggregated results. The mean overall difficulty score of pupils = 2.70. The mean and standard deviations of the responses on the CCDQ items are presented in Table 1.

As can be seen in table 1, standard deviations of the item scores show an acceptable variability. We computed the intercorrelations among the 30 items scores, but a complete matrix of intercorrelations (30x30) is too large for presentation in this article. In general, correlations among the item scores (mdn = 0.211 and range = .05 – .61) indicate an adequate differentiation among them. Reliability of the questionnaire as a whole was .81.

FACTOR ANALYSIS

The test used for measuring the appropriateness of the 30-item correlation matrix was the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The KMO test produces a value between 0 and 1; a value above .60 suggests that a factor analysis is appropriate. The KMO value for the current data was .90, indicating that a factor analysis procedure was appropriate based on the intercorrelation matrix of all items. Also Bartlett's test showed good parameters (see Table 2).

The data from 1488 participants was submitted to a principal-components factor analysis to determine the number of independent factors or dimensions of difficulties within the set of 30 questionnaire items. Only factors yielding Kaiser's criterion

Table 1 The means and standard deviations of the responses on the CCDQ items (n=1488)

No	Item	Mean	Std. Deviation
1.	I know that I have to choose a career, but till now I have not taken it seriously.	1.78	1.112
2.	Work is not the most important thing in one's life and therefore the issue of choosing a career doesn't worry me much.	1.48	.741
3.	I believe that I do not have to choose a career now because time will lead me to the „right“ career choice.	1.79	.959
4.	It is usually difficult for me to make decisions. When facing several possibilities I have a problem to decide.	2.92	1.199
5.	I usually need a confirmation and support for my decisions from someone I trust.	2.98	1.241
6.	Often a fear of failure prevents me to decide.	2.61	1.200
7.	Up to now I haven't a career which can be taken in consideration for me.	1.43	.878
8.	Up to now I hesitate among several possibilities which can be taken in consideration for me.	2.72	1.335
9.	I constantly change my career preferences.	1.57	.891
10.	I need a verification of my career choice from viewpoint of my abilities, interests and so on.	2.80	1.223
11.	I do not know what steps I have to take to make a career decision.	1.89	1.056
12.	I do not know what factors to take into consideration in deciding about my career.	1.77	.955
13.	I don't know how to compare my abilities and personality traits with requirements of particular careers.	1.97	1.005
14.	Up to now no career has attracted my attention.	1.27	.726
15.	Up to now I am not sure what kind of work I prefer.	1.85	1.065
16.	I don't have enough information about my competencies, personality traits, interests and values.	2.10	.950
17.	I don't have enough information about fields of study in higher education.	2.46	1.077
18.	I do not have enough information about possibilities of enrollment in particular fields of study.	2.22	1.035
19.	I don't have enough information about the entrance examinations.	2.26	1.109
20.	I don't have enough information about the contents of study.	2.50	1.018
21.	I don't have enough information about work market opportunities after finishing study.	2.58	1.092
22.	I don't know the miscellaneous vocations existing in our country.	2.06	.968
23.	I don't have enough information about careers which interest me.	2.50	1.044
24.	I don't know what will be the possibility to work in the career I think about in the future.	2.20	1.169
25.	I don't know how to verify my abilities and/or personality traits.	2.30	1.138
26.	I don't know how to get thorough and new information about existing vocations and schools.	1.67	.967
27.	I don't like any vocation or school which can be taken into consideration for me.	1.32	.755
28.	I have miscellaneous interests which can be hardly integrated.	2.27	1.417
29.	My abilities and interests do not match those required by the occupation I am interested in.	1.80	1.010
30.	People who are important to me do not agree with the school/career I want to choose.	1.39	.899
	Total	2.08	1.04

Table 2 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		903
Bartlett's Test of Sphericity	Approx. Chi-Square	12928.720
	df	435
	Sig.	.000

(eigenvalue ≥ 1.0) were extracted. The factor analysis identified a total of 7 factors that accounted for 54.2% of the variance in the set of 30 questionnaire items.

After the initial factors have been extracted from the analysis, the factors can then be rotated in various ways to optimize their interpretation. In the present analyses, Varimax rotation was used for orthogonal rotation and is presented here.

We set .40 as the minimum factor-loading criterion; items loading at or above .40 on two or more factors (impure items) were not used in the interpretation. As noted, the principal-components factor analysis identified a total of seven factors that accounted for 54.42% of the variance in the set of 30 items. The matrix of factor loadings resulting from varimax rotation of orthogonal components is provided in Table 3. Based on these loadings, the seven independent factors of career related decision making difficulties were readily identifiable by the author.

The first factor accounted for 24.13 % of the total variance. A total of 5 items loaded on Factor 1: no. 1, I know that I have to choose a career, but till now I have not taken it seriously, no. 2, Work is not the most important thing in one's life and therefore the issue of choosing a career doesn't worry me much, no. 3, I believe that I do not have to choose a career now because time will lead me to the „right“ career choice, no. 7, Up to now I haven't a career which can be taken in consideration for me, and no. 14, Up to now no career has attracted my attention. Hence, we labelled this factor Lack of Motivation.

The second factor accounted for 7.91% of the total variance. It consisted of four items: no. 17, I don't have enough information about fields of study in higher education, no.18, I do not have enough information about possibilities of enrolment in particular fields of study, no. 19, I don't have enough information about the entrance examinations, and no. 20, I don't have enough information about the contents of study. We labelled this factor Lack of Information about Schools.

The third factor accounted for 6.54% of the total variance. It consisted of the items no. 11, I do not know what steps I have to take to make a career decision, no. 12, I do not know what factors to take into consideration in deciding about my career, no. 13, I don't know how to compare my abilities and personality traits with requirements of particular careers, no. 25, I don't know how to verify my abilities and/or personality traits, and no. 26, I don't know how to get thorough and new information about existing vocations and schools. We labelled this factor Lack of Knowledge about the Process of Career Decision Making.

The fourth factor accounted for 4.55% of the total variance. Four items loaded on this factor: no. 16, I don't have enough information about my competencies, personality traits, interests and values, no. 22, I don't know miscellaneous vocations existing in our country, no. 23, I don't have enough information about careers which interest me, and no. 24, I don't know what will be the possibility to work in the career I think about in the future. We labelled this factor Lack of Information about Occupations and Self.

Table 3 Principal Factor Analysis with Varimax Rotation of the CCDQ Items

		Rotated Component Matrix(a)						
		Component						
		1	2	3	4	5	6	7
1.	I know that I have to choose a career, but till now I have not taken it seriously.	.581						
2.	Work is not the most important thing in one's life and therefore the issue of choosing a career doesn't worry me much.	.547						
3.	I believe that I do not have to choose a career now because time will lead me to the „right“ career choice.	.615						
4.	It is usually difficult for me to make decisions. When facing several possibilities, I have a problem to decide.					.684		
5.	I usually need confirmation and support for my decisions from someone I trust.					.799		
6.	Often a fear of failure prevents me to decide.					.744		
7.	Up to now I haven't any career which can be taken in consideration for me.	.668						
8.	Up to now I hesitate among several possibilities which can be taken in consideration for me.						.712	
9.	I constantly change my career preferences.						.577	
10.	I need a verification of my career choice from the viewpoint of my abilities, interests and so on.					.548		
11.	I do not know what steps I have to take to make a career decision.			.678				
12.	I do not know what factors to take into consideration in deciding about my career.			.709				
13.	I don't know how to compare my abilities and personality traits with requirements of particular careers.			.678				
14.	Up to now no career has attracted my attention.	.688						
15.	Up to now I am not sure what kind of work I prefer.	.470					.402	
16.	I don't have enough information about my competencies, personality traits, interests and values.				.467			
17.	I don't have enough information about fields of study in higher education.	.633						
18.	I do not have enough information about possibilities of enrollment in particular fields of study.	.781						
19.	I don't have enough information about the entrance examinations.	.770						
20.	I don't have enough information about the contents of study.	.684						
21.	I don't have enough information about work market opportunities after finishing study.	.421			.581			
22.	I don't know the miscellaneous vocations existing in our country.				.656			
23.	I don't have enough information about careers which interest me.				.744			
24.	I don't know what will be the possibility to work in the career I think about in the future.				-.512			
25.	I don't know how to verify my abilities and/or personality traits.			.588				
25.	I don't know how to get thorough and new information about existing vocations and schools.			.550				
27.	I don't like any vocation or school which can be taken in consideration for me.	.510						.515
28.	I have miscellaneous interests which can be hardly integrated.						.640	
29.	My abilities and interests do not match those required by the occupation I am interested in.							.514
30.	People who are important to me do not agree with the school/career I want to choose.							.716
	Percentage variance	24.13	7.91	6.54	4.54	3.98	3.79	3.53
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.								

The fifth factor accounted for 3.98% of the total variance. It consisted of 4 items: no. 4, It is usually difficult for me to make decisions. When facing several possibilities I have a problem to decide, no. 5, I usually need confirmation and support for my decisions from someone I trust, no. 6, Often a fear of failure prevent me to decide, and no. 10, I need a verification of my career choice from the viewpoint of my abilities, interests and so on. We labelled this factor General Indecisiveness.

The sixth factor accounted for 3.79% of the total variance. It consisted of three items: no. 8, Up to now I hesitate among several possibilities which can be taken in consideration for me, no. 9, I constantly change my career preferences, and no. 28, I have miscellaneous interests which can be hardly integrated. Because the item 8 had the highest loading, we labelled this factor Internal Conflicts.

The seventh factor accounted for 3.53% of the total variance. It consisted of two items: no. 29, My abilities and interests do not match those required by the occupation I am interested in, and no. 30, People who are important to me do not agree with the school/career I want to choose. Because item 30 had the higher loading, we labelled this factor External Conflicts.

DISCUSSION

The present study examined career-related decision difficulties among adolescents. To assess these difficulties, we used the new instrument, *Career Choosing Difficulties Questionnaire* (CCDQ) in which 30 difficulties were represented by one respective item. We collected and analyzed the responses of 4th-year grammar school pupils choosing fields of study in higher education. For the participants who had made a career decision, the seven major categories of problems emerged: Lack of Motivation, Lack of Information about Schools, Lack of Knowledge about the Process, Lack of Information about Occupations and Self, General Indecisiveness, Internal Conflicts, and External Conflicts.

Lack of Motivation factor accounted for the largest amount of variance in the item pool (24.13 %). Hence Lack of Motivation to engage in the decision-making process is the most prominent aspect of the domain of career decision problems. This factor emerged also in Gati et al. (1996) taxonomy of career related decision-making difficulties.

The second factor – Lack of Information about schools – accounted for 7.91% of the variance. No such factor can be found in the cited taxonomies of other authors. This may reflect a Slovak (and also Czech) specific. Namely, participants of our study were in their final year of study at grammar school and at the time of data collection, they stood immediately before the submission of the application for study at the institutions of higher education. Many of these institutions enroll applicants for study on the results of entrance examinations. So to have information about the entrance examinations may be crucial for getting accepted at a particular field of study.

The third factor – Lack of Knowledge about the Process of Career Decision Making – accounted for 6.54% of the variance. The same factor can be found in taxonomy of Gati et al. (1996). The Information about the Process of Career Decision Making (Steps) is a specific kind of information provided by career guidance and counselling.

The fourth factor accounted for 4.55% of the variance. It comprised three items aiming to measure the information about careers and one item measuring information about self. In the taxonomy of Gati et al. (1996), two separate factors

resemble this factor: Lack of Information about Occupations and Lack of Information about Self. This factor may reflect an inability to adequately crystallize one's career relevant characteristics or to see how one's personal characteristics can be implemented in careers.

The fifth factor – General Indecisiveness – accounted for 3.98% of the total variance. It comprised three items aiming to measure general and one item aiming to measure specifically career indecisiveness. Indecision reflects a chronic and pervasive difficulty in making decisions. This factor resembles the Indecisiveness factor from Gati et al. (1996), Gati and Saka (2001), Kelly and Lee (2002), Fuqua and Newman (1989), the Indecision factor from Tinsley et al. (1989), and the Indecisiveness factor from Stead and Watson (1993). Trait Indecision can interfere with one's ability to process and act on information attained in the career counselling process.

The sixth factor accounted for 3.79% of the variance. We termed it Internal Conflicts – the factor that can be found in Gati et al. (1996) – to not increase the technical terms. In our counselling praxis, we had used the term *relative indecision* to indicate a problem with hesitation in deciding among the various career alternatives.

The seventh factor, External Conflicts, accounted for 3.53% of the total variance. This factor resembles the equally labeled factor from Gati et al. (1996) and the Disagreement with Others factor from Kelly and Lee (2002). This factor is unique in that it reflects a problem occurring after a tentative decision has been reached. A career goal or aspiration must be formulated before objections from significant others can be anticipated. Disagreement with others is a problem in implementing a decision rather than in formulating career options.

This study identified the common problems of adolescents in their career development and demonstrated the heterogeneity of career development needs of the 4th-year grammar school pupils. Understanding the pupils's career decision-making difficulties helps counsellors to identify specific interventions and intervention strategies that may be most useful in fostering a pupils's career development.

Results also provided support for the construct validity of the CCDQ from the examination of the internal structure of the CCDQ by factor analysis. However, further research aimed at refinement of this new instrument is needed before the revised CCDQ can be transformed from a research questionnaire into a validated clinical instrument.

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