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Invited Symposium

Research, Practice and Solution Challenges in Applied Psychology in Japan: Past, Present and Future

Division: General

Chair:	Yasuhiro NAGATSUKA (Niigata Chuoh Junior College, Japan)					
Participants:	Marehiro MUKAI (Chukyo University, Japan)					
	From the viewpoint of industrial and organizational psychology					
	Machiko FUKUHARA (Psychoeducation Institute, Japan)					
	From the viewpoint of counseling/clinical psychology					
	Kazumi RENGE (Tezukayama University, Japan)					
	New perspective on traffic psychology in Japan					
	Yuji SASAKI (Komazawa University, Japan)					
	The application of autogenic training to workplaces health promotion					
Discussants:	Elizabeth NAIR (National University of Singapore, Singapore)					
	Tetsuo NAITO (Shinshu University, Japan)					

Opening address Yasuhiro NAGATSUKA

Ladies and gentlemen, it is the time to start our invited symposium. "Research, Practice and Solution Challenges in Applied Psychology in Japan: Past, Present and Future." It is a great pleasure for us as Japanese applied psychologists to have the opportunity to inform the members of IAAP of the development and trends in Japanese applied psychology.

I am a professor of applied psychology at Niigata Chuoh Junior College and a committee chairman for the advancement of international academic relationships in the Japan Association of Applied Psychology.

We were invited here by Professor Dr. Elizabeth Nair, the Organizing Chair of the Singapore ICAP. She is here now as one of the discussants. We are grateful for the opportunity to present our activities here today and dedicate this presentation to the Japanese Association of Applied Psychology.

Now I will share the theme of our symposium. Could you please refer to your printed copy?

I will show you the purpose of this symposium

Various approaches to the problems of daily life have been developed within psychology. Applied psychologists have made every effort to eliminate socio-pathological phenomena such as traffic accidents, crime and delinquency, bullying and school dropouts. In Japan, however, these problems remain unyielding. For example, accidents are still frequent regardless of years of assiduous effort by traffic psychologists. The writer (1989) reviewed the Japanese traffic psychology literature and summarized that the research focused on driving aptitude tests, driving behavior analyses, drivers' guidance based on the analysis of eye movements, the psychological process of accident, driving and dyschromatopia, and driving and falling asleep at the wheel phenomena.

Naturally, traffic accidents are eliminated by an integration of approaches from various fields. From the research review, we determined that Japanese traffic psychologists have not reduced accidents because they engaged in "analysis" and/or "diagnosis" of behaviors, without submitting a workable solutions to the problem.

Misumi (1989) commented on the writer's review that this field needded further development in order to achieve more effective methods of accident prevention since despite the efforts no sign of accident rate decrease has been recorded.

By definition, psychologists analyze, diagnose, describe and explain human behaviors. By conducting these tasks they have made a number of contributions to the advancement of human behavior theory. However, psychology as a human science has another fundamental aim, as Kitamura (1979) emphasized in his treatise on welfare psychology and Motoaki (1995), then the president of JPA, pointed out in the annual conference of JPA.

The present writer thinks it is important for us as applied psychologists to participate in research to reduce socio-pathological problems, such as the prevention of traffic accidents. We not only need to execute analytical and diagnostic "fact-finding" investigations but we must also implement more practical and therapeutic researches.

Today we have four symposium participants and two discussants. They will present in the order shown on the screen. (Here the title of the symposium and the names of chair, participants and discussants are shown on the screen as described above on this page by overhead projector).

Now we will move to the presentations (Four participants made presentations. Their papers are shown in the following order).

History and Current Topics in the Industrial and Organizational Psychology Field in Japan

Marehiro MUKAI

Introduction

I am reporting on developments in research in Japan from the viewpoint of industrial and organizational psychology. I have analyzed work behavior using time and motion studies to understand work behavior and content. The purpose of this study is to examine the skill acquisition process and clarify learning characteristics, as well as to investigate the process of how work errors occur and how to make work behavior more efficient through skill acquisition. Some of the results of this research will be discussed later; however, I would first like to briefly introduce recent trends in industrial and organizational psychology research in Japan.

It is clear that the growth of general psychology and industrial psychology since the 18th century is closely related in research areas and themes. In an age when work occupies a large part of human life, research related to work is an important theme of industrial psychology. At the beginning of the 20th century, H. Münsterberg established a framework for industrial psychology research. In 1915, his works were translated and published in Japan, and an industrial efficiency movement based on his thought developed. In 1921, The Institute for the Science of Labour was established, and studies using the scientific management methods of F.W. Taylor, and physiological and psychological studies of industrial work were begun.

In recent years, there have been striking changes in work modes, and the field of industrial psychology has expanded greatly in conjunction with the diversification of daily life resulting from the increasing urbanization, complexity, and sophistication of industrial society. These areas of study (112)

have become highly specialized.

I am involved with two academic organizations concerned with industrial and organizational psychology. One group is the Japanese Association of Applied Psychology, and the other is the Japanese Association of Industrial/Organizational Psychology. The areas of research covered by these groups can be broadly divided into four areas.

- (1) Organizational psychology research (Organization)
- (2) Consumer behavior research and marketing (Market)
- (3) Aptitude/personnel evaluation (Personnel)
- (4) Work load/environment and behavior (Work)

Four Recent Themes in Research

(1) Organizational psychology research (Organization)

Areas of research have included the relationship between career development and organization, research on commitment to employee organizations, superior leadership and subordinate behavior, and individual member characteristics as a source of team performance regulation.

(2) Consumer behavior research and marketing (Market)

Investigations have studied marketing from bidirectional perspectives including both the individual and society, such as research on the purchase decision process, the connection between environmental factors and individual characteristics of consumers, and social responsibilities of consumers and businesses.

(3) Aptitude/personnel evaluation (Personnel)

Areas of research have included various issues of personnel psychology relating to job evaluation and performance appraisal, and proposals for various plans relating to work motivation.

(4) Work load/environment and behavior (Work)

Human engineering has also been investi-

gated in terms of universal design, the relationship between work performance and the extent of the load in new types of work, work environment and work performance, and the mechanism of human error generation and its prevention.

Research in Workload/Environment and Behavior

Whatever the field, themes relating to our living in modern society have been the subject of study, and the importance of applied psychology is well understood. I, personally, have a deep interest in topic No. 4, work load/environment and behavior, and my research in this area is ongoing. I will now introduce part of that research.

(1) Movement fluctuation and its meaning in pure repetitive work (Mukai, 1981)

Work activity controlled by an external machine pace (e.g., conveyor belt) was subjected to time motion analysis using a VTR. Although work times differed depending on conditions, it became clear that some variance occurs with tracking eye use in purely repetitive work even when work time is adjusted using holding time.

The paced work in belt-conveyor systems is one of the most typical work patterns in modern industry. One problem is that workers engaged in paced work have to perform a monotonous task, and there are two noteworthy factors that might have adverse mental and/or physical effects, (a) the heteronomy in work activity, and (b) the continuity or quick repetition of similar motions. The problem of work load should be approached from the perspective of the type of work as well as the reality of a worker's adaptation to the task. The present study attempts to examine some aspects of the behavioral characteristics of the worker in a paced task. Two experiments were performed.

Experiment 1. Two subjects participated. The task was the repetitive handwork of simple packing, and it was performed under three different restrictive conditions, namely, with a working time per unit of 15, 20, and 30 seconds. Materials (colored cubes) were carried by a belt conveyor. The subject picked them up, packed them into a package according to a model, and then wrapped the package. Each work cycle time and pause were recorded for analysis.

Experiment 2. The task was identical to that of the first experiment. Six subjects were used and each wore an eye camera (Figure 1). The purpose of recording their eye movement was to examine the scanning patterns of materials and the model.

The major results from this study were as follows.

- (1) The time study of the repetitive task revealed that the shorter the time per unit task, the smaller the variance (standard deviation) (Table 1). However, there were considerable variations in each cycle time even under severe restrictions.
- ⁽²⁾The subjects used several scanning patterns during the experiment sessions, especially when packing the cubes into the package. The patterns used were classified into five categories (Table 2). The scanning pattern varied even with the same subject under identical restrictive conditions (Figures 2 and 3).

The results of Experiment 1 were similar



Figure 1 Subject wearing eye camera

periment				
	Cycle time mean (SD)	Pause mean (SD)		
Condition 1 (30 sec)	19.7 (3.09)	8.2 (4.60)		
Condition 2 (20 sec)	17.3 (2.69)	1.6 (2.44)		
Condition 3 (15 sec)	13.8 (1.73)	0.8 (0.44)		

 Table 1
 Mean and Standard Deviation (SD) of cycle time and pause in the first experiment

Table 2Five categories of scanning patterns





Figure 2 Temporal variations in scanning patterns (Subjects A)



Figure 3 Temporal variations in scanning patterns (Subjects B, C, D, E, & F)

to those of Experiment 2 regarding temporal variations. This fact seems to suggest that human behavior is flexible under severe temporal restrictions, which may be a basic mechanism of adaptation to paced work in order to maintain performance stability. However, further research is required to determine whether or not these experimental results can be applied to actual industrial work. (2) Skill acquisition and changing work strategies when performing complex work (Mukai, 1984)

Simultaneous execution scenes for performing two to three types of tasks were experimentally set to consider the characteristics of skill acquisition. Workers were not aware of the individual tasks, but rather coped with the totality of several tasks collectively. In this multiple execution process, there were large individual differences in work strategy, and it became clear that learned skills were easily disrupted by adding new tasks.

Most daily life activities, including those in the workplace, are very complex processes. We are usually required to do several tasks at a time. In other words, we not only have to achieve the main task, but also cope with other perceptual information from various directions while doing it. In the present study, two kinds of experiments were designed to understand some aspects of behavioral characteristics of multiple task performance.

Experiments: Three types of tasks are used in this study to apply the multiple task method.

- ①Task A is an assembly task to build a baby buggy (the performance of which greatly depends on the skill acquisition level), which is considered to be the main task by all subjects.
- ②Task B is the reaction time to an auditory stimulus. The subjects had to verbally respond to specific numbers (6/3, 8/4, 7, 9).
- ③Task C is a reaction task to a visual stimulus. The subjects had to verbally respond to light of a specific color (red).

Experiment 1. The subjects were six university students. First, they were instructed to perform tasks A and B (dual task), and later Tasks A, B, and C (multiple task). Three subjects were able to assemble the buggy without a model, and the rest were able to perform the dual task to a certain degree.

Experiment 2. Twelve students partici-

Subject	Skill level: able to perform dual task			Skill level: able to assemble without model	
Task	А	В	С	D	F
Multiple task Assembly time (Task a) Response error (Task b) Response error (Task c)	7′ 25″ 2.9% 3.2%	8′ 20″ 23.5% 17.4%	14' 21" 11.5% 39.8%	8′ 55″ 14.7% 59.7%	10′ 46″ 34.7% 32.2%
Dual task Assembly time (Task a) Response error (Task b) Assembly task	4' 17" 2.3% 3' 21"	5′ 27″ 5.3% 4′ 30″	5′ 53″ 7.5% 5′ 01″	8′ 13″ 12.3% 6′ 17″	14′ 36″ 19.8% 8′ 27″

Table 3 Assembly time and response error rate of Tasks b and c under multiple task condition

pated as subjects, 11 of whom were beginners. They were required to perform Tasks A, B, and C simultaneously (multiple task) from the first trial, and four of these subjects tried five times in series.

All trials in both experiments were recorded using a VTR to analyze the assembly time and response errors in Tasks B and C.

The major results from this study were as follows.

- (a) Although experienced subjects were able to assemble the buggy without a model, their acquired skills often broke down when tasks B and C were added to task A.
- (b) In the process of skill acquisition of the assembly task, large individual differences appeared in their coping with the tasks, which may be the result of the strategy adopted by each subject Such individual differences were also seen among experienced subjects (Table 3).

This "individual difference in coping attitude," which was observed among both beginners and experienced subjects, is a certain feature of human behavior when a complex task is imposed and may be a basic mechanism of human behavior. However, we will have to await the results of future research to apply the results to actual work behavior or in daily life activities.

(3) Research to understand the behavioral characteristics of the elderly (Mukai, 1993)

The work proficiency process using keyboard typing and assembly tasks was subjected to essential motion analysis by VTR. The elderly exhibited great individual differences in the time required for skill acquisition, whereas youths demonstrated remarkable skill acquisition, and attained a similar skill level much earlier.

Middle aged and older workers are increasing remarkably in the working population in Japan. The number of older people who desire to continue working after retirement is also increasing rapidly. The present paper is intended to clarify the characteristics of the work behavior of elderly workers handicapped by reduced physiological functions, in particular by studying their relationships to specific features of the tasks used in the experiments. Five elderly persons and five young students served as subjects. They performed two kinds of experimental tasks: the relatively easy assembly of a handicraft with few parts, and the more sophisticated assembly of a baby buggy with a greater number of parts. The learning process of assembly skills for the handicrafts and the effects of this assembly experience on subsequent assembly behavior coping with the baby buggy were analyzed by means of a time and motion study.

The main results of this study were as follows.



Figure 4 Transition in time required for "handcart" assembly and effect of experience on assembling of baby buggy

- (DIn terms of the cycle time required for assembly, both groups demonstrated remarkable progress in acquiring assembly skills. The elderly workers usually proceeded by shortening the cycle time, and exhibited efficient collection and assembly of parts only after several trials. The students, however, overcame their initial confusion by the second trial, and achieved smooth assembly along with the correct selection of materials (Figure 4).
- ⁽²⁾In the learning process, there were large individual variations in the elderly worker's ability to do the task, which can be observed in the differences in assembly cycle time. They tended, at the initial stage of assembly work, to glance at the model, to start working by extending their hands to the materials, proceeding with the work without much care until meeting a problem, and often coming to a standstill. As they acquired skills, various cor-

responding behaviors appeared. Some pondered a long time without moving their hands, some were slow in assembly motions, and others exhibited behavior almost as smooth as the young group (Figure 5).

- (3)When the time required to assemble the baby buggies was compared to the time required for handicrafts, the elderly workers made the best use of their previous assembly experience for another kind of work. In contrast, few of the younger subjects were able to shorten the time required.
- (4) There were few differences between the aged and the young in the number of block elements included in the assembly flow chart. However, there were significant differences in the effective use of materials, motion speed, establishing the concept of the work to be performed, and understanding how to structure the given



Figure 5 Transition in time required for assembly and each element time

task. The individual variations in the time required to learn skills were greater among the elderly than among the young. Other remarkable variations among elderly workers were seen particularly with respect to the shortening of the assembly cycle time, progress in unit motion time, and establishing work strategies or the way in which the work concept was to be realized. In contrast, the younger subjects were able, by the second trial, to overcome the confusion resulting from the trial and error process, thus reaching a certain level in the time required for assembly. It has been suggested that elderly workers encounter greater difficulties in adapting to a new situation or in overcoming mistakes made in assembly, and these difficulties result in greater individual variations. The kind of tasks given and the worker's past experience are considered to have a significant influence on the way in

which a new task is performed. It will be important to further study the mechanism of acquiring technical skills in more detail in order to learn whether or not the behavioral differences found in this study could result from individual variations alone, or from differences due to age.

Discussion

In Japan today, it is difficult to pursue social issues from the perspective of research due to the rapid pace of social change. Furthermore, there are limits to methods for coping with such change in the refinement of fields of research. Research methods have been similarly affected as work modes have diversified in recent years, as in using a single method to measure work load when there is an increase in work requiring mental skills. There is an ever greater need for job analysis, a detailed analysis of work behavior, and job content by appropriate methods in order to design better work conditions.

(1) Examples of research showing the need for motion studies to cope with work conditions

Kosugo, Ambe and Hirata (1990) compared differences in day and evening work content of kindergarten teachers using the snap reading method to study the load in evening childcare work. In daytime childcare, activities center around play and personal assistance, whereas in the evening, the focus is on assistance with meals, and sleeping. This work content analysis is ongoing, and the work time analysis method is effective. However, specific work conditions and the relative load cannot be clarified by time data alone.

(2) Work study of air traffic control using the communication method

Morikiyo adjusted the content of communications between pilots and traffic control recorded on a tape recorder, and mapped the time and direction of information generation on a diagram. This diagram shows the density of information required for the job, and is an index of the load of traffic control work. This communication method can be applied to the study of jobs that proceed through communication.

Modern industry is characterized by separately automated, mechanized work, and a system of production technology. Humans working in this system seek greater precision and constancy by increasing the performance of the entire system. It is believed that humans are very flexible and can adapt well to change, but are deficient in constancy. Machines, on the other hand, have excellent constancy, but cannot adapt to change. Classic time and motion studies are useful analytical methods today for analyzing such human behavior. Researchers in applied psychology, and particularly researchers in industrial psychology, need the insight to identify the fundamental issues,

and on that basis seek a means-devised research.

References

- Kosugo, R., Ambe, K., & Hirata, A. 1990 Workload of nursery teachers in night childcare facilities (1), *Journal of Science of Labour*, 66, 268–274 (in Japanese).
- Mukai, M. 1981 Behavioral characteristics of workers in paced task, *Journ.al of Science* of Labour, 57, 505–513 (in Japanese).
- Mukai, M. 1984 Behavioral characteristics of worker in assembly—Application of a multiple task method, *Journal of Science of Labour*, **60**, 313–321 (in Japanese).
- Mukai, M. 1993 Behavioral characteristics of aged workers in assembly work with special reference to the effects of assembly work experience. *Journal of Science of Labour*, **69** 45–56 (in Japanese).

From the Viewpoint of Counseling and Clinical Psychology

Machiko FUKUHARA

The twenty-first century is called the 'century for humanity.' All over the world people are trying to survive the stressful situations they are faced with in their daily lives and to maintain good mental health. The Japanese are not the exception. According to a survey by The Cabinet office (2001), over half percentage of people in the study expressed that they have troubles/anxieties in their daily life. And those troubles/anxieties are likely to reflect the problems of their own as well as environmental factors surround them. (Figures 1 and 2). People face problems at schools (LD, violence, refuse of going to school, breakdown of classes, bullying), at companies (stress and/or depression from being fired, re-structure of organization, IT problems, etc.), at home (communication gaps among family members, child abuse, violence, care for the elderly, nuclear family problems, etc.), at medical settings (doctor/nurse-patient communication), in the community (social involvement of the retired, and/or the aged, taking care of children, critical incidents, etc.). Psychologists should try to do anything that they can for the betterment of peoples' mental health.

During the last hundred years of the history of psychology, the necessity of strategies for the 'application of psychology' has been voiced especially during the later half of the 20th century. What is the application of psychology? This author has understood it as experimental, developmental, counseling, clinical, each psychologist has to have tools for understanding human behavior and tools for research so that the application would work effectively to the welfare of human beings. This issue is an 'old-but-new' type of issue. As a counseling/clinical psychologist, I will discuss this matter in this paper. First, I will review it along with the history of counseling/clinical psychology in Japan and then, I will examine how these fields could apply to the problem solving which is mentioned the above.

Review of the issue according to the history

I. Past decades (1960–1990)

1. Earlier (1989), I wrote a paper on counseling psychology in Japan. In it, I described the initial stage of the clinical psychology organization which started with the licensing of clinical psychology professionals called clinical psychologists. In this particular article, I pointed out the following items (1), 2), & 3)) as features in this period:

1) Identity of psychologist. Counseling psychology was imported to Japan in the 1950's from the United States, along with the reformation of education after World War II. So, I should say that counseling in Japan started with student counseling. Clinical psychology has a little longer history than counseling. Though the discipline of clinical psychology was also brought from the West (psychoanalysis, etc.), Morita therapy, Zen, and Yoga, originated in the East existed also in Japan before the 1950's.

Regardless of it's long history, the concept and function in clinical psychology and



n male:2,116 female:2,496

Figure 1 What are your troubles/anxieties in daily life about?



Figure 2 Troubles and/or anxieties in daily life according to ages and sex

counseling psychology was unclear. Though the terms, counseling, clinical psychology, and psychotherapy area became popular during the decades (1960-1988), the identity of respective areas, in terms of their functions, was not necessarily clear and this invites confusion. It is generally understood that clinical psychology and psychotherapy followed the medical model, and the function of counseling was included in clinical psychology/psychotherapy, a discipline which emphasized therapy and treatment. At the same time, counseling whose function was educational and developmental gradually became popular especially in educational settings. However, the term 'counseling psychology' was not well understood even among the professional.

2) Before 1988 there was no license on an authorized level in Japan. A united association joined by 30 psychology related associations which we call 'nintei kyokai' (in Japanese), had just started (1988), with the leadership of the Association of Clinical Psychology, to provide independent/private license for clinical psychology professionals (called clinical psychologists). But this was not done on the national level nor was it verified. Primarily because of the uncertainty of the function of clinical psychologists, the fields of work of the holders of this license were limited: most of them worked under medical professionals in medical settings as psychometrists, counselors, or the like.

3) However, the variety of problems individuals brought to student counselor and/or clinics, for instance, indicated that mental health professional needed to be more conscious of clients' developmental phases and that the holistic approaches to the mental health of human beings was necessary.

2. The Japanese Association of Health Psychology was established in 1990 due to the demands of community: The idea of a holistic approach toward individuals and the concept of the individual-inrelation to the community likely facilitated the establishment of health psychology in Japan.

In sum, during this period, the concepts and functions among mental health professions, such as, counseling psychology and clinical psychology was unclear, and it was suggested that the education and the training of the professionals in those areas of psychology needed to be examined carefully so that they could be accepted more widely by the people who desired their services. Also it was suggested that the professionals would have had to re-examine how to approach the individual client, so that their knowledge and services would work more effectively for them. As a result the effectiveness of psychoeducation was slowly realized.

II. Present

- 1. There is still a problem of identity among those fields: They are still obscure and vague. Also no licensing on a national level for the professionals has been established. However, some improvement, for better or worse, has been seen as follows: The terms counseling, clinical psychology, and psychotherapy are coming to be accepted by the Japanese people in general since late 1980'. However, the tendency to see that the function of counseling is included in clinical psychology, whose discipline is rather for therapy and treatment still remains to some extent. On one hand, some groups of people insists on the effectiveness of the function of counseling based independently on counseling psychology which follows the educational / developmental model, while stressing the developmental/educational phase of the individuals.
- 2. Licensing. A gold rush for the establishment of licensing by each independent psychology related association for counselors (or the like) might be the highlight to indicate the popularity of this area during the period. In addition to a license being offered by the said Association, Nintei Kyokai for clinical psychologists, The Japanese Association of Counseling Science established its own licensing procedures (1986) for candidates who receive certain training and cleared the requirements by this association. The Japanese Association of Educational Psychology also started licensing for school counselors; candi-

dates have to have teaching certificates, in addition to the graduate school diploma. The Japanese Association of Applied Psychology also started to offer a license (1995), under the title of applied psychologist whose expectation includes counseling work. The Japanese Association of Health Psychology (1997), The Japanese Association of Student Counseling (2002), The Japanese Association of Educational Psychology (1997) are each offering their own license. A joint license are being offered by The Japanese Association for the Study of Developmental Psychology, Japanese Association of Educational Psychology and Japanese Association of Personality (2002). Another joint license is offered by the Japanese Association for the Study of Developmental Psychology, Japanese Academy of the Learning Disabilities and the Japanese Association for the Study of Developmental Disabilities (2002). More license follows. The more popular counseling and psychotherapy becomes the more education, qualifications and the issues surrounding these areas appear to be diversified and critical.

In the meantime, re-examination of education and training for those professionals are being voiced. A union consisting of approximately 30 psychology related associations has started to discuss this issue regularly. For instance, for the licensing of clinical psychologists being offered by the said association, candidates are required to have a minimum of master's degree in their specialty, during which and/or after 2 years of training (depending on the kind of school they have graduated from) as well as passing an examination. And the number of accredited colleges and universities offering specific education and training meeting the requirements by the said association has increased to approximately over 100 graduate schools (or departments). Those holding a license obtained from this specific association counts for over 10,000 people, at present,

and they are expected to work at various fields including high schools. As a matter of fact, over 70% of school counseling positions are occupied by those people. This shows that clinical psychology is looking towards education rather than the medical field as it was in the past. However, the problem still exists as to how to treat individuals, holistically. The systematic education and training for them might be needed.

The roles of the license holders from other psychology associations should be re-examined, too. Philosophy towards the services and the actual services provided should be consistent with professional practice. The types of required subjects in the curriculum, the education and training programs offer, etc., decides the function of this area. 'Who does What' is also important. Along with the above mentioned, union of psychological associations is examining a possibility of establishing a common certificate to undergraduates certifying completion of fundamental education, which will lead to the further education in areas of applied psychology. The Japanese Psychological Association is already offering a certificate to undergraduate psychology majors, thus recognizing them for finishing basic education study in psychology. While, services by clinical psychology and counseling psychology professionals are expected to be greater than before, because of the needs among the citizens, we have to think seriously about how to respond to their needs. Clinical psychology and counseling psychology are being accepted as independent but also as interdisciplinary fields. Naturally the function and position of psychotherapy and counseling are also being studies. However, it is also that the more popular counseling becomes, the more confused laymen are likely to be.

3. Educational/Developmental counseling in relation to the problems they have (including career counseling) is coming popular, along with rapid social and economic changes. There are demand to 1) help people reduce stresses and strains caused by organizational change (restructuring); 2) help provide appropriate career choices for students; 3) help with problem solving due to communication gaps at home and at school; 4) help with student problems of not learning, school refusal, violence at schools; 4) help reduce their feelings of anxiety towards loss of family member, identity & selfesteem, etc., especially among the aged persons; 6) help anxiety that comes from structural change of family (for example, change in the nuclear family); 7) help them seek self-actualizations, etc. Problems are brought about by people in all stages of life.

- 4. Health psychology is becoming popular among professionals, not only in the psychology profession but also in the medical profession. The Japanese Association of Health Psychology sponsored International conferences in 1993 and in 2000 inviting eminent psychologists from abroad (incl. Asia), among which Drs. Spielberger, Matarazzo, Eysenk, and Vickty Tan (from Singapore).
- 5. The concept of 'Psychoeducation' just starting to be recognized and understood. Microcounseling training, encounter group training, assertiveness training, etc. are being considered as useful tools for the improvement of mental health on the part of individuals in the community and also to protect them from their becoming ill in stressful situations, such as abuse, trauma, and depression.
- 6. The idea of 'individual-in-relation' is becoming accepted. That is, people are becoming aware that an individual has relationships with family, community, etc. and that a holistic approach to the mental health of human beings is needed in any kind of counseling/psychotherapy.

In sum, though identity issues in those fields is gradually improving, at least on the cognition level among professionals, it is still difficult for people-in-general to identify them. The fact that educational and developmental counseling and clinical counseling (psychotherapy) are becoming recognized, though vaguely, allows a co-existence of both types. For instance, some schools (junior high schools) hire both clinically oriented counselors who have gotten their licenses from the union of clinical psychologists, and school counselors who have obtained licenses from other associations. But it sometimes invites confusion among school staff, teachers, students and parents. Unless individual identity is established, no role will work fully though the various professionals work together.

III. Future

 The counseling profession need to be understood better. The examination of education and training and or the qualifications for mental health professionals should be continued in order to bring them up to highly qualified standards. By doing so, identity and acceptance of professionals in those areas will be improved.

- 2. Professionals in counseling and clinical psychology fields need to be more flexible in accepting others in different fields within the same disciple and/or those of related fields (Fig. 3).
- 3. Carrying out research should be encouraged in order to attain objectives of skills, which could be the basis for actual practicum and application, thus avoiding a trial-and-error style of practice without feedbacks: A research based theory and practicum/application is needed. In order to do so, methodology of research is to be continued to be explored for its validation, though it is difficult because of the multiple variable in human behavior. Good strategies are needed when examining the experiments. Also, practicum experiences are necessary for experimental purposes: feedback and data-based empirical study will contribute to better methodology and to its validation. On this point, in Japan, professionals in those fields, in general, are likely to have been discouraged being busy with the work at hand. This should be reflected on the fact that there is less research, and less original counseling orientation found here.



function of counseling and/or interview

Figure 3 Suggested relationships between counseling and psychotherapy

- 4. What we have to do is to create counseling and clinical psychology methodology which fits more to people in our culture. A multi-cultural approach to individuals whose idea is common to different cultures should be encouraged more.
- 5. Ethics including confidentiality for assessment, protection of innovator's rights, publication rights, keeping up with a validity of information, etc. should be strictly kept, especially in this profession. Sometimes no one can identify correctness from incorrectness in those professions, especially when it comes to the problem of 'counseling skills,' which is dangerous.

IV. Some thoughts on the issues discussed the above

1. Cultural factors might have affected mental professions in Japan

1) Counseling/psychotherapy were not accepted for a long period of time in Japan. For this, the personality of the Japanese which does not allow oneselves to talk about things around him/herself easily might be considered as one of the reasons. Japanese tend not to disclose information about themselves to others, especially to professionals (Fukuhara, 1986).

2) The movement for licensing proceeded slow. Why was the movement blocked? Bureaucracy among sections in different offices governed by the government, bureaucracy of the individual association and/or the individuals which are likely to be hesitant to allow others to join, a lack of professionals including researchers and practitioners familiar with counseling and clinical psychology education might be several of the reasons. Those might be related to a phase of the Japanese culture.

3) More involvement of community with a view of 'indidual-in-relation' is expected.

4) There is a commonality of personal problems seen among the people from different cultural background. At the same

time, the original orientation of counseling innovation in Japan should be encouraged to develop.

2. Strategies are needed in order to keep up with 'identity and collaboration/cooperation' among the mental health professions.

1) Though identity is necessary, as an independent function only it will not work effectively: 'Collaboration/joint work,' with different function/people of professional area might be necessary. It might be difficult especially for the Japanese, because of their national characteristics and the tradition, to work cooperatively with others accepting the others as independent/different individual from themselves.

2) It might be necessary for us to explore methodology for research and application. In order to find the respective identity, the education and the training for each professional area might need to be re-examined.

3) Observing concerns, pathology, behavior of the individuals from multiple perspectives seems to be more important on the part of the professionals.

4) Reformation of peoples' cognition regarding 'mental health' is necessary. Psychoeducation might play a role in this.

5) The applied psychologists would have to be multiculturally minded, paying attention to the similarities and differences of human beings.

Conclusion

From the viewpoint of 'research, practice, and application for solution' we, the Japanese psychologists have to be sensitive to the needs of the people and have to develop unique methodologies for exploring the tools for a better life. Educational/developmental, preventional and therapeutic approaches might be needed in the realm of psychoeducation, counseling, psychtherapy and therapy. Each area would need identity in terms of its cognition, expectation and function and also need cooperation/joint work in order for the fulfillment of the goal of the 'solution for the application of psychology.'

Acknowledgment

Thanks to the Cabinet Office for the permission to use data/figure: Figures (1 and 2) are translated into English with permission.

References

- Cabinet Office. 2002 Opinion Poll. Tokyo, Japan.
- Fukuhara, M. 1986 Factors affecting student counseling services (In Japanese). Tokyo: Kazama Shobo.
- Fukuhara, M. 1989 Counseling Psychology in Japan. Applied Psychology: An International Review, 38, 409–422.
- Fukuhara, M. 2000a Counseling Inclusion for Adolescents. Paper presented in an invited symposium at the XXXVII International Congress of Psychology. Stockholm, Sweden.
- Fukuhara, M. 2000b Retaining Vital Involvement in the Life Cycle—Social Involvement of the Older Person in Japan. Paper presented in an invited symposium at the XXXVII International Congress of Psychology, Stockholm, Sweden.
- Handbook of Labour Statistics. 2001 Ministry of Health, Labour and Welfare, Japan.
- Hidano, T., Fukuhara, M., Iwawaki, S., Soga, S., & Spielberger, C. 2000 Manual, Japanese version of the State-Trait Anxiety Inventory (STAI-JZY) (In Japanese). Tokyo: Jitsumu Shuppan.
- Murai, K. ed. 2001 *Applied Psychology, Today.* Tokyo: Hokujyu Shuppan.
- Oyama, T., Sato T., & Suzuki, Y. 2001 Shaping of scientific psychology in Japan, *International Journal of Psychology*, **36**(6), 396–406.
- Sue, D., Ivey, A., & Pedersen, P. 1996 Multicultural counseling and therapy. Pacific Grove, Ca: Brocks/Cole.
- The Japanese Association of Clinical Psychology 2001 *The manual for the candidate of clinical psychologist* (In Japanese). Tokyo: Seishin Shobo.

A New Perspective of Traffic Psychology in Japan

Kazumi RENGE

1. Introduction

Motorization in Japan has developed rapidly since the 1950s, so that by the year 2000 a total of 90 million vehicles were in use on Japanese roads. The number of licensed drivers reached about 75 million and licenses had been issued to 85% of the males and 55% of the females in the total population. As traffic patterns emerged and a system was established, many aspects of Japanese lifestyle such as consumer behavior and leisure activities also changed very rapidly, producing a variety of changes in the number and types of traffic accidents in Japan.

The annual number of fatalities resulting from traffic accidents in Japan peaked in 1970 at 16,765 then decreased steadily to 8,466 by 1979. That number began to rise again, however, and exceeded 10,000 in 1988. Fatal accident rates for pedestrians and cyclists as a percentage of the total fatal accidents are still very high (28.1% for pedestrians and 11.3% for cyclists in 2001), compared with other highly motorized countries.

A number of behavioral studies have been conducted on road users in Japan. On the basis of such psychological research, we will try to develop useful responses to human factors, especially within the educational and/or technical areas of our traffic system. This presentation focuses on recent research on road users, especially of school children and elderly drivers; that is those road users at the early and last stages of development. It is important, not only in Japan but in other Asian countries as well, to develop useful programs to prevent accidents involving vulnerable road users, particularly children and the elderly. Other countries could benefit from Japanese experiences in the development of a risk management system for their protection.

2. School Children's Hazard Perception and Traffic Education

Children's behavior in traffic is always a major topic of traffic psychology in Japan. We investigated children's ability to perceive potential hazard by using videotaped traffic scenes. Their various physical and psychological developments as well as their experience in actual traffic situations could contribute to improve their ability to perceive and anticipate traffic hazards. Renge (1998) demonstrated the effect of driving experience on a driver's hazard perception. The present study focused on school children's development of hazard perception throughout the progress of the school year. Participants were 608 school children (327 boys and 281 girls) from the first year to the sixth year at two schools in Suzuka City. A test of hazard perception for school children. named "What is dangerous here?" consisted of nine traffic scenes (including one scene for practice). Each scene was projected on a screen by a video projector in the classroom. After observing each scene, the school children were asked to choose the most dangerous road user in the situation from three or four alternatives (see Figure 1).

The results showed that the first- and the second-year students scored lower on hazard perception than the third-year students and above (Figure 2). While their scores were considerably stable from the third school year onwards, they did increase slowly between the third and the last school year.

The children's ability to perceive potential hazards related to signaling (blinkers by other road users or traffic lights) was considerably less than to obvious hazards such as approaching cars.

Traffic education for children plays a critical role in the further development of children's coping behavior in traffic as the first step of life-long education and training in traffic. However, very little research has been conducted on what kinds of traffic education are most effective in improving children's abilities in traffic. "Ayatorii" was used in Suzuka City primary schools where teachers present the program to third-year school children. In the "Ayatorii" program, teachers not only use worksheets, videotapes, and a variety of supporting materials,



Figure 1 Example of the test "What is dangerous here?"





Figure 3 Total test scores of groups before and after traffic education and control group (Mean)



but also try to use real traffic situations in order to facilitate children's traffic comprehension. Research into the effectiveness of this educational program was carried out in several schools in 2000 to 2002.

The first results are presented here. Traffic knowledge and comprehension in third-year school children was measured before and after traffic education. There were 231 children (122 boys and 109 girls) in the experimental group, and 54 (27 boys and 27 girls) participated in the control group.

Figure 3 shows total scores of children's traffic comprehension before and after traffic education, as well as the control group's scores. After-education scores were significantly higher than before-education scores.

A histogram of the test scores in Figure 4 demonstrates that the distribution peaked at 60 to 69 points before education and at 70 to 79 points after education. The distribution generally moved toward higher points.

3. Research on Elderly Drivers' Risk-Taking Behavior

The number of accidents involving elderly drivers is becoming an increasingly important traffic safety problem in Japan. The population of the elderly was 22 million in 2000 and is expected to reach 32 million in 2015, which could be as much as 25% of the total population. At the same time, the number of elderly drivers could increase even more rapidly, from 7.2 million in 2000 to 16.5 million in 2015. The rate of increase of elderly drivers is much higher than that of the elderly population because the rate at which licenses are being issued to them increases rapidly hereafter. Fatal accidents involving the elderly have already increased since 1980. Based on such indices, it could be anticipated that accidents involving this group of pedestrians and/or drivers will also increase. We need more useful measures to deal with the safety problems for this particular segment of the population.

Research on risk-related behavior of elderly drivers was conducted at four driving schools with training facilities in Japan, in which their driving performance, hazard perception, self-evaluation, risk-taking behavior, and CERAD (a diagnostic test for Alzheimer and related dementia disorders) were measured. Participants consisted of 130 elderly drivers (aged 65 and over), 32 semi-elderly drivers (aged 55–64) and 36 middle-aged drivers (aged 54 and below). For the sake of clarity, we have chosen to designate the drivers in the 65–74 year-old age range as "junior elderly drivers," and the drivers over 75 as "senior elderly drivers" (Figure 5).

Elderly drivers exhibited far fewer head movements for observation while driving than did middle-aged drivers (Figure 8), and they also drove at higher speeds at the restricted-visibility intersection (Figure 9). The tendency toward higher speed by elderly drivers was not found on the straight course of the range (Figure 10).

Elderly drivers demonstrated much lower scores in the hazard perception test, especially for potential road hazards, than did the other age groups. Driving instructors evaluated the driving skills of elderly driv-





ers lower than other age groups, although elderly drivers evaluated themselves very high. This discrepancy between both evaluations increased with age (Figure 11).

4. General Information about the Japanese Association of Traffic Psychology

The Japanese Association of Traffic Psychology has about 300 members; half of us are researchers and half are traffic experts from practical fields. The Association holds its conference twice a year. International academic exchange is one of our association's main activities. Scientific cooperation from German-speaking and Nordic countries is especially strong. Although there is very little support of our activities from the Japanese government and society, we continue to conduct academically qualified research to obtain both a wealth of psychological knowledge of road users' behavior and more effective measures to prevent traffic problems in Japan. Psychological facts should be used to establish safer and more comfortable



Figure 7 In-car equipment and data recording



Figure 9 Passing speed at an intersection with restricted visibility between middle-aged and elderly drivers



Figure 11 Self-evaluation of driving skills by elderly drivers versus evaluation by driving instructors

traffic environments. We hope to establish broader and stronger cooperative relationships with Asian and other researchers around the world.

The Application of Autogenic Training to Workplace Health Promotion

Yuji SASAKI

1. Brief Definition of Health Psychology

Health psychology research and practice focus on disease recovery, rehabilitation, disease prevention, health preservation and health promotion from a psychological standpoint.

2. The Development of Health Psychology

Although the history of health psychology is brief, it has been developing rapidly in the last quarter century. This rapid development has occurred for the following reasons.

- The characteristics of somatic disorders have changed from acute diseases to chronic ones through the development of medicine and lifestyle changes in advanced nations.
- 2) People are becoming more interested in their health and a higher quality of life.
- Engel's (1977) bio-psycho-social medical model fostered interest in the psycho-social component of health.
- The rapid increase in medical expenses in Japan has stimulated an interest in disease prevention adminis-

tratively and individually.

5) The research of disease etiology developed from the standpoint of behavior science.

3. The Development of Health Psychology in Japan

The Japanese Society of Health Psychology (JSHP) was founded in 1988 and the first annual meeting was held that same year. The first international congress of health psychology in Japan was held in 1993. In 1997, the certification system for health psychologist was formulated.

The JSHP now has more than 1,800 members and 300 certificated health psychologists.

4. Autogenic Training at the Workplaces

Autogenic Training is a systematic selfrelaxation method developed by J. H. Schultz in the 1920s for reducing stress responses. This method was applied to psychosomatic disorders and neuroses. Shortly after its development in 1943, it was used in European workplaces as a stress coping method.

In Japan, AT was introduced in 1951, and began to be used in the clinical setting ten years later. In 1978, the Japanese Society for Autogenic Therapy (JSAT) was founded. By last year, JSAT had over 700 members. The industrial sector is responsible for a significant the recent increase in membership.

In 1987, a food company introduced AT for employee health promotion. As a result, the cost of factory medical expenses for that year decreased from the cost of the previous year. The cost in the other factory sites of the same company increased. Through these data, the union of health insurance decided to provide funds for researching and distributing AT to the industrial world.

Because of the funding, more than 50 major companies have introduced AT in the workplace. Detailed data have been obtained from more than 23,000 employees in 28 companies in the energy, chemical, food, construction and transportation industries.

5. Application of Autogenic Training to a Company

As an example, I would like to discuss the case of a transportation company.

This company suffered from a rapid increase of accidents, providing the motivation to introduce AT. There were 17 accidents in this company in 1980. The accidents in 1981 to 1983 increased from 20 to 24.

The main goals for introducing AT were to a) reduce ever-increasing medical expenses by health promotion, b) maintain safe driving and prevent accidents by occupational drivers through the stress reduction effect of AT.

1) Method

In 1986, I introduced AT under the auspices of the Japanese Union of Health Insurance, and an AT practical training program of AT was started by the instructor from the Mental Health Institute of Japan Production Center (JPC). The systematic introduction of AT was initiated in 1987.

2) Plan

AT was expected to be practiced daily at home.

In the workplace, a) AT was practiced on days of the month containing the number 8, such as on the 8, 18 and 28. b) AT was implemented at meeting and seminar times, c) the dates for practicing autogenic training before every meeting were printed beforehand in the yearly staff schedule.

The AT program was also introduced using the company's internal video service. 3) Results

A survey revealed the followings three results; 1) recovery from shoulder stiffness (48%), 2) improvements in driving manners (47%), and 3) reduced feelings of irritation at traffic jams (46%).

The annual average number of traffic accidents in the company from 1987 to 1993 was reduced to seven. (There were 45 drivers at that time). As a result of this improvement, the two specialized accident administrator positions were eliminated.

6. Practice and Application of Autogenic Training

Lastly, through these experiences and data, I would like to propose the following three items as practical methods of autogenic training at the workplace.

- 1) Practical program of AT for all the members at the workplace
- 2) Guide lines for practicing AT in the company

Elected officials in charge of the AT program

An internal communication system for AT practice

Regulation of the conditions of practice

Feedback to all employees about the degree of mastery and the effects of AT

Promotion of the independent practice

Meetings for exchanging information and reporting on the conditions of practice

Information to family members about AT

Developing an AT practice leader Deciding on days for reinforcing the

3) Use of equipment

practice of AT

Putting up posters on notice boards Using tape recorded background music

Using seals or biofeedback equipment for measuring skin temperature

Chair's Comments Yasuhiro NAGATSUKA

Four presentations are over. We would now like to discuss the presentations. I will hand over the baton to Professor Naito, the discussant.

Discussants's Comments Testuo NAITO

Thank you for introducing interesting topics about trends of applied psychology in Japan. I am Dr. Tetsuo Naito, Prof. of Social Psychology at Shinshu University. I would like to ask presenters (symposists) for additional explanations from the practical and therapeutic standpoint based on questions submitted by Prof. Dr. Nagatsuka and in terms of Japanese cultural background.

To Prof. Dr. Marehiro Mukai

Prof. Mukai, recently in Japan, life styles of people are changing and becoming strikingly diversified. We applied psychologists should always contribute to human everyday life in various situations. You have researched skill acquisition with vigor by means of time and motion. Time and motion studies are traditional and classic, but how can we make use of them given the new and changing situations?

To Prof. Dr. Fukuhara

Prof. Fukuhara, we can understand the history of the profession of counseling and clinical psychology in Japan based on your presentation. You told us, "What we have to do is to create counseling and clinical psychology methodologies that match people in our culture." I guess that our own methodologies of therapy and/or treatment and research depend on cultural behavior patterns peculiar to people in Japan. Are there any characteristics of disorder or pathology, and also therapeutic methods in Japan? What could we contribute to other Asian countries?

To Prof. Dr. Renge

Prof. Dr. Renge, you explained that the Japanese lifestyle has changed very rapidly, bringing about a variety of changes in traffic accidents. Moreover, rates of fatal accidents of pedestrians are very high. Traffic education regarding hazard perception for school children and elderly drivers

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is very important and effective in reducing accidents. We anticipate that the engineering of various vehicles, road environments and traffic systems will change more and more. I guess we also need to modify and/or create teaching materials for hazard perception. What is the most important point, do you think?

To Prof. Dr. Sasaki

Prof. Dr. Sasaki, I am interested in the application of autogenic training to companies. I anticipate this will also be very useful to other companies of Asian countries. When we try to introduce autogenic training to a company, how and whom should we persuade? What is the most effective method?

(Additional explanations were provided by the four symposists, and the discussion was opened to the floor. The explanations were very interesting and suggestive. We are sorry we must omit them because of limited space.)

Closing Remarks Yasuhiro NAGATSUKA

In the abstract for this conference I found an interesting title in the Paper Session of Division 13 "Traffic and Transportation Psychology" on p. 105. The title is "Does traffic psychology contribute to traffic safety?" by a well-known Swiss traffic psychologists Dr. Huguenin.

In line with his title, I ask "Does applied psychology contribute to make life better for everyone?"

An example of "practical and therapeutic research"

Here I would like to mention an example of the "practical and therapeutic research" by the present writer. This is a challenge given the behavioral problems on the road. Starting from field research at a taxi company, Nagatsuka (1971, 1993, 1997) maintained a driver improvement campaign for ten years based on the Niigata model. The model places special emphasis on the importance of a driver making a temporary stop at intersections without traffic lights, with no priority and/or with poor visibility.

The primary reason for the campaign was theoretical. A temporary stop at crossings was thought to be a "sine qua non" for drivers to ensure precise perception and to promote driver's exact perception of the traffic environment. Secondly, it was expected that a temporary stop could reduce accidents because in Japan more than half of accidents had been caused by behavioral problems on the road, i.e., perceptual failures and the failure of temporary stop at crossings.

Our campaign produced dramatic results. The number of traffic accidents caused by the "failure of temporary stop" declined over ten years in the participating transportation companies, almost fully satisfying the objectives of our model. This campaign is spreading across Japan. At the 1996 annual meeting, the Japanese Association of Traffic Psychology (JATP) agreed unanimously to announce the campaign as an effective measure of accident prevention in Japan. In 1998 the northern city of Aomori participated in the campaign. JATP conducted its research through the support of the city's mayor. "Temporary stop" is considered a successful way to reduce traffic accidents in Japan.

Thank you very much for your kind attention.

It is unfortunate that remarks by Professor Nair, one of the discussants of our symposium, were not included. Her manuscript was not sent to me.