

Preface

Investigations of how easy or difficult it is for the individual to cope with the environment and of how great is the impact of positive or negative aspects of the environment on the individual are investigations of welfare. Welfare includes health as well as feelings and the state of various physiological and behavioral coping mechanisms, hence it varies over a range from very good to very poor and can be assessed scientifically. The welfare of individuals is a central concern for those carrying out quantitative studies in psychiatry and psychology. There are many parallels in the methodology with studies of the welfare of farm, companion, laboratory, and wild animals but too little exchange of expertise.

The opportunity to organize a workshop and produce this book was seen as a unique occasion to promote interchange of ideas among scientists studying welfare. Some are physiologists and immunologists investigating stress and its consequences. Others are concerned with the causation of abnormal behavior and associated brain and body physiology changes in farm animals, laboratory animals, or humans. Yet another group focuses on the causation and treatment of depression and other mental illnesses with multifactorial causes.

One year prior to the workshop the Program Advisory Committee (D.M. Broom, C.L. Coe, M.F. Dallman, R. Dantzer, D. Fraser, K. Gärtner, D.H. Hellhammer, and N. Sachser) carefully selected the participants, the topics and authors for the background papers, and defined the four topic areas which form the bulk of this book.

Good Welfare: Improving the Quality of Life

Much of the evidence used in welfare assessment indicates the extent of the problems of individuals, but it is also important to recognize and assess good welfare, that is, happiness, contentment, control of interactions with the environment, and possibilities to exploit abilities. It is desirable to assess the specific functioning of the brain when welfare is good in humans and other animals; the methods of recognizing when welfare is, or is likely to be good; and the factors which contribute to good welfare in humans and other species.

Key Elements of Coping

One definition of coping is "having control of mental and bodily stability." Whether coping is directed towards situational problems or inner emotions, it involves key bodily processes in the brain and at the periphery. It is important to understand brain, physiological, immunological, and behavioral functions which are involved in the motivational and emotional aspects of coping responses.

Sources of Variability in Coping

Individuals vary in how they cope with challenges. Some of this variation is a consequence of the use of different strategies in apparently similar circumstances. Genetic variation between individuals can affect such strategies as can variation in the environment during development. There are problems associated with coping with the social situation in nonhuman species and variation in the physiological measures which indicate that the coping system is failing.

Pathological Consequences of Stress

Stress has been defined as an environmental effect on an individual which overtaxes its control systems and results in adverse consequences, eventually reduced fitness, although not all scientists use the term in this way. Integrative studies are needed of the consequences of stress and, in particular, depression and the metabolic, cardiovascular, immunosuppressive, disease incidence, and general fitness reduction consequences. Evidence can be obtained from experimental and observational studies of human subjects, captive animals, and wild animals.

We have tried to define the gaps in our body of knowledge, identify the controversial areas and issues, and translate them into research directions and, at times, critical research projects and experiments and hope that the results will be valuable to the scientific community at large. The ideas and data are presented as papers modified in the light of discussion and comment from participants and the results of the group discussions.

The concepts that are central to this book are discussed in Chapter 1, but some editorial points should also be made. The terms “welfare” and “well-being” are both used in the text and have essentially the same meaning. However, in most of the scientific literature “welfare” has been used in a more precise way and is now widely used as a scientific and legal term. Hence it is used in most papers. Some of the hormones referred to in this book include the term “trophic.” This word means “pertaining to or promoting growth” whereas “tropic” means “pertaining to or determining direction of movement.” Since adrenocorticotrophic hormone is carried in the blood to the adrenal cortex and does lead to activity and growth in cells there, but does not predictably affect any direction of movement, it should not be called “adrenocorticotropic.” The term “coping style” has been used in the literature, but style is defined in the Oxford English Dictionary as a “manner of writing, speaking, or doing” or the “collective characteristics of the writing or diction or artistic expression or way of presenting things or decorative methods proper to a person or school or period or subject.” Hence, since the word is linked to art in the general sense or to a manner which is considered high quality or upper class, its usage is not appropriate for biological description. Coping strategy is used here, rather than coping style.

Acknowledgments

I was delighted to be asked to serve as the chairperson of this workshop. My task was greatly facilitated by the competence and enthusiasm of Klaus Roth, Dahlem’s acting director, and the Dahlem team. On behalf of all participants, I thank them for their excellent support. I also thank the Program Advisory Committee for their guidance and the moderators and rapporteurs, who devoted considerable time and energy to ensuring that the workshop proceeded in

a resolute but smooth and pleasant atmosphere. Finally, I thank the *Freie Universität Berlin* and the *Deutsche Forschungsgemeinschaft* for their financial support for this Dahlem Workshop. They ensured that the leading scientists in the field were able to exchange views and create a platform for better liaison in future, as well as producing some original ideas.

— D.M. Broom, Chairperson