Health and Society
"New kid on the block"

Prof. dr. Maria A. Koelen

Inaugural lecture upon taking the post of Professor of Health and Society at Wageningen University on 10 March 2011.

WAGENINGEN UNIVERSITY
WAGENINGEN UR

ISBN 987-90-8585-892-8

Health and Society
"New kid on the block"

1. Introduction

Health and Society is a new chair at Wageningen University. The chair focuses on the ways in which people shape their social and physical environment and so influence their own and other people's health. The mission of the Health and Society chair is fully aligned with the mission of our Alma Mater, which is to improve health and quality of life. Every now and then I have to explain why health is such an important topic here, because the first association with our university is agriculture. I can assure you that because of its unique set-up of life sciences, Wageningen UR (University & Research centre) provides a stimulating intellectual environment for Health and Society. The research agenda of Wageningen University is covered by three domains, being (1) food and food production, (2) the natural and built environment, and (3) health, lifestyle, and livelihood. These domains are also the basis for the chair group Health and Society, albeit from a social sciences perspective, and with health as its core domain.

Several UR groups, within both the social sciences and the natural sciences, study the relation between food, environment, and health. Consequently, Wageningen UR possesses an interesting combination of beta-gamma research in this respect, thereby giving the Health and Society chair a unique position in the Netherlands and abroad.

In my lecture, I will first address the context of the chair and elaborate on different understandings of health. Next, for the purpose of this meeting, I will focus on two relevant topics for Health and Society, that is, overweight and ageing society, sharing my view on the approach towards research in these areas. Finally, I will briefly address our educational efforts.

2. The context

If people are asked about the most important thing in life, they almost always mention health first. Indeed, being healthy is important for individuals, for families, communities, and society at large. Health it is not understood as an end in itself, but as a resource for living; it enables people to lead an individually, socially, and economically productive and meaningful life. A healthy population therefore serves the interests of society, but it can also be said that a healthy society serves the interests of the population.

Population health has always been a matter of concern, but strategies to protect and improve health have changed over the years. Until the first half of the 20th century, mortality and morbidity were strongly related to communicable diseases. High mortality rates resulted mainly from infectious diseases and highly contagious (epidemic) diseases such as typhoid, tuberculosis, and the plague. For many centuries, the medical sector, not surprisingly, was exclusively responsible for the protection and improvement of health. Medical science has provided new knowledge and insights about diseases and the ways to control these diseases. These advances in medicine have been of enormous benefit to many people, and when medical knowledge was subsequently combined with improvements in sanitation standards, living conditions, income, and education, great progress was made. The demise of epidemics in industrialised countries, declines in both maternal and infant mortality rates, and the increasing proportion of the population living into old age are just a few examples.

Nevertheless, we must not become complacent. Disease profiles of many European and other industrialised countries have changed remarkably in the past decades, shifting from communicable diseases to chronic, non-communicable diseases. Morbidity and mortality rates due to health problems such as cancers, cardio-vascular diseases (including high blood pressure, high blood cholesterol), respiratory diseases (including asthma), addictions due to substance abuse (e.g. alcohol or drug abuse), and mental disorders (e.g. depression, dementia) have increased. It is estimated by the World Health Organisation (WHO) that non-communicable diseases currently account for approximately 60% of the global disease burden. Trends indicate that, because of the rapid ageing of the population

and people's greater longevity, chronic diseases are likely to become even more important over the next decade (WHO, 2004, 2006). Therefore, considerable multi-disciplinary scientific effort continues to be necessary in order to decrease mortality and morbidity and to improve health and quality of life. The chair

3. Health and its determinants

Population health seeks to step beyond the individual-level focus of medicine, but we have to consider that populations are made up of individuals: in the end, the health of a population is the sum of the health status of its individual members. Individual health is generally defined in terms of physical, social, and mental wellbeing. Therefore it contains both objective and subjective aspects. Someone may have a disease without feeling ill, or, conversely, someone may feel ill without having a disease in the medical sense. On the basis of a review study, Idler and Benyamini (1997) concluded that subjective health (that is: self-rated health) is an even stronger predictor of mortality than objective health. Moreover, health is not a static state. In my view, individuals continuously move on a "life-line," ranging from good health to ill health. Generally, people are not just in ill health or in good health. People are ageing, attract diseases e.g. due to consumption patterns, are involved in accidents, have to live or work under hazardous circumstances, etc. This is the central idea in the concept of health development – also referred to as the life course perspective. The life course perspective is based on the notion that the resources and risk factors that people encounter in life have cumulative and interactive effects on health (Kuh & Ben-Shlomo, 2004). Non-communicable diseases generally have their origins in early life and depend on the resources and risk factors encountered throughout life. Lindström and Erikkson (2010) call this "the river of life."

The causes of health and disease are often multidimensional. Determinants of health include biological factors (gender, genetic predisposition, acquired factors such as physical condition, acquired immunity), mental and social factors (e.g. sense of coherence, locus of control, environmental mastery), lifestyle (e.g. alcohol abuse, smoking, poor diet, and lack of physical activity), factors in the social (e.g. family, community, workplace) and physical (e.g. food hygiene, quality of housing, availability of green space) environment, and the organisation of healthcare.

Figure 1 gives an overview of these determinants. A detailed description of them can be found in Koelen and van den Ban (2004).

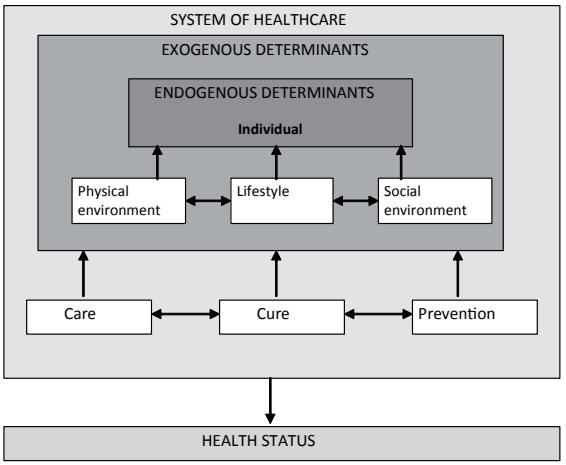

Figure 1: Overview of determinants influencing health

As an example, I will further elaborate on the determinants of health and their interaction, in relation to two issues that top the agenda in public debate, policymaking, and science: overweight and the increasing number and age of senior citizens. Both contribute to the growing burden of non-communicable diseases. Overweight is a topic for which we already have a knowledge base as regards the causes in relation to the determinants of health, and the consequences. However, although progress has been made, overweight remains a key concern. Perhaps some important underlying mechanisms have not yet been sufficiently addressed. With regard to the ageing society, we know quite well why people live longer, but we know only little about the consequences of increasing age for society.

4. Overweight

The common standard for weight is phrased in terms of Body Mass Index or BMI. BMI is defined as the individual's body weight divided by the square of his or her height. An index between 18.5 and 24.9 is considered normal weight. An index below 18.5 is considered as underweight, an index between 25 and 29.9 as overweight, and an index over 30 as obesity, nowadays referred to as serious overweight. The prevalence of overweight and serious overweight has risen steadily over the past three decades. In the Netherlands, the percentage of people who are overweight has increased from 33% in 1980 to about 45% today. The percentage of people who are seriously overweight has increased from about 5% to 11%. This increase is evident not only in the adult population but also in children. On average, 10% of children aged 2 to 6 years of age are overweight (van der Lucht & Polder, 2010). Similar figures are found in other European Union countries, and an even higher prevalence is reported in the US (e.g. Flegal et al., 2010). Now let us look at the possible causes of overweight.

4.1 Causes of overweight

Overweight is partially attributable to biological factors – for example genetic endowment. If one or both parents are overweight, the chances are high that their child will become overweight as well. Hormone problems, illnesses, or drugs to treat illnesses may also cause overweight. Nutrition groups at Wageningen University study the links between, for example, dietary components and physiological factors (satiation and satiety) and overweight. However, there is a strong behavioural component as well. Overweight is mostly caused by an energy imbalance. This concerns the balance between the amount of energy that is taken in from food or drinks and the energy that the body uses for things such as breathing, digesting, and – most important - physical activity.

The most recent available data on food consumption in the Netherlands show that 92% of the population (both male and female) consume too much saturated fat. Moreover, about 80% (78% male, 80% female) of the population aged 12 years and older consume less than the recommended 200 grams of vegetables, and about 70% (76% male, 68% female) of the population consume less than 200 grams of fruits a day (VCP, 1998; Hulshof et al., 2004). Moreover, many people

do not lead an active life. We rely on our car instead of going by bike, take the elevator instead of the stairs, spend many hours in front of the television and behind computers, etc. In 2005, about half of the adult Dutch population and about 75% of adolescents aged 12 to18 engaged in less than half an hour of physical activity per day (CBS StatLine, 2010).

Overweight is a problem in itself, but it also increases the risk of diseases such as coronary heart disease, type 2 diabetes, and different forms of cancers (amongst others endometrial, breast, and colon cancers).

4.2 Where to go from here?

In the Netherlands, we have a long history of health education and health promotion focusing on the improvement of dietary patterns and physical activity, but in view of the numbers that I have already presented, they do not seem to be as successful as expected. Hence, even though we know a lot about the causes of overweight, we do not seem able to tackle the problem effectively. A closer look at the content of campaigns and programmes reveals that they often focus on the individual, treating food habits and physical activity as individual choices. In my opinion this is too narrow. People do not live in isolation, and both the social and physical environment facilitate or inhibit the choices that are made (Koelen, 2007a,b; Verkooijen et al., 2007). What we eat, and how physically active we are, is not just the result of individual choices. For example, eating habits within families and parental feeding strategies have an influence on children's consumption patterns. Social norms on how to eat may hinder a person from becoming more critical about how much and what to consume (Bouwman et al., 2009). Different types of physical activity are convincingly associated with perceived social support (Wendel-Vos et al., 2007). Characteristics of the natural and built envrionment, such as lack of neigbourhood sidewalks, safe bicyle tracks, or safe playgrounds for children inhibit physical activity (e.g. Brownson et al., 2009; Northridge et al., 2003). Supportive social and physical environments, however, facilitate such behaviour. Hence, a broader approach to overweight seems to be important. The scope should include the *interaction* between individuals and their social and physical environment in order to further unravel the mystery of eating behaviour and physical activity. In my opinion, programmes to reduce overweight

would be more effective if they included the social and physical environment. This is what we intend to do in the chair group Health and Society.

5. Ageing society and health

Between 1950 and 2009, life expectancy at birth in the Netherlands increased from 70.2 to 78.5 years for males and from 72.5 to 82.6 years for females (CBS StatLine, 2010; van der Lucht & Polder, 2010). Similar figures are found in other European and industrialised countries. According to the *Actuarieel Genootschap* (2010), life expectancy will further increase, to 85.5 years for men and 87.3 for woman, by the year 2050. This positive development is partially attributable to advances in medicine (for example early detection, improved technology, and improved therapy), partially to healthier lifestyles, and partially to safer environments (e.g. natural and social environment, traffic safety, absence of war). However, because more people live into old age and because chronic diseases more frequently occur in the elderly population, the burden of disease will also increase. The ageing of the population will have an impact on healthcare, housing and facilities, and consumption patterns, but also on social security costs.

5.1 When is someone aged?

In the literature, public debates, and policymaking, there is no consensual definition of ageing. In many countries "being old" is defined in terms of the age at which people retire (in the Netherlands this has until now been 65 years of age). On the other hand, government policies addressing the ageing society, but also programmes to improve the health of the elderly population, sometimes even include groups aged 45 or 50 years. Besides this diversity in the age range, some "makers of ageing policy " seem to consider the elderly as grey, frail people, but the elderly today are in much better shape and live a more active life than the elderly in the 1950s. It can be argued that it is not the absolute age that determines what individuals are doing or strive for. We need to develop a more realistic view on ageing.

5.2 Perceptions of healthy ageing

There is no consensus about the meaning of *healthy* ageing. Does it merely refer

to longer life expectancy and the ability to work, to life expectancy with relatively intact physical, mental, and social functioning, or is it an expression for good quality of life in old age? Is it a "state of mind" of the individual or a dynamic adaptation process? How do individuals themselves perceive healthy ageing? Research in this regard reveals that older people include more and different components in their perception of healthy ageing than professionals, scientists, and policymakers do. For instance, professionals focus on the absence of disease, and negatively phrased topics such as loneliness, overweight, and falling accidents, whereas the elderly focus more on supportive social environments and the ability to manage restrictions (Flick et al., 2003; Bryant et al., 2001; Naaldenberg et al., in press). Perceived control and felt responsibility seem to be pivotal (Koelen & Lindström, 2005). Some research has been done on the function of control beliefs, sense of coherence, and the ability to cope with negative life events. The evidence is growing that there are substantial differences in perceived health between individuals scoring positively and negatively on these concepts. People who have a responsibility for day-to-day events, even seemingly small things such as watering plants, or caring for a little bird or dog, have more favourable psychological well-being and show higher health and activity patterns than people without such responsibility (e.g. Rodin & Langer, 1977). It is important to further unravel these processes and to develop parsimonious conceptual frameworks that can be used in the development of strategies to maintain and/or improve health and quality of life.

5.3 Ageing and the social and physical environment

With increasing age, many changes occur in the social environment, for example because of retirement (job loss), death of a spouse, death of family members and friends, and the onset of disabilities and mobility problems. Research about the facilitation of social participation and stimulating social engagement is mounting, but still a lot has to be done. More research is needed based on the notion that the elderly have more years to live in good health, and that, even though they may accumulate chronic diseases, the constraints experienced are reduced (van der Lucht & Polder, 2010). The elderly today are more mobile and active than in the past, and they use modern communication applications. But is society prepared for an ageing population? Although older people are often seen as passive and frail, in reality most of them are not. Furthermore, they have more time to spend on travel,

cultural, and other activities. This may lead to increased and new types of demand within these arenas.

The ageing society leads to an increase in single-person households. The time of extended families in which three generations lived together seems far behind us. As Prof. Cees de Hoog pointed out in his farewell speech (de Hoog, 2007), the traditional family is on the decline and new forms of "households" are emerging. He estimated that in 1971, that is 40 years ago, 17% of households in the Netherlands were single-person households. This percentage had doubled to about 35% in 2004. The ageing population is an important factor in this increase. Overall, governments stimulate the elderly to keep living independently in their own homes, from which they move to smaller ones, often alone after the loss of their partner. Females outnumber males in this regard. It is expected that single-person households will further increase to over 40% by 2050 (de Hoog, 2007). These developments may have consequences for the housing sector, for example the need for more and smaller houses with dedicated facilities and services. There are also consequences for urban planning, for example the availability and accessibility of facilities and services such as shopping, banking, and healthcare, for infrastructure and public transport, availability of green space, and opportunities to integrate and participate in social life.

5.4 Ageing and care

As more and more of the elderly continue to live independently, extra demand will be put on home-based care, especially on the informal care which is provided by relatives or friends. It is expected that the demand for informal care in the over 65 age group in the Netherlands will increase by 25% in the next two decades (Sadiraj et al., 2009). The quality of care depends on the interaction between the characteristics of the care giver, the care receiver, and the context in which the care is provided. However, when the care need of the individual exceeds the capability of the informal care provider, somebody [in the household] has to take responsibility for finding an alternative solution. In this case, the help of medical professionals or medical institutions has to be sought (Niehof, 2004). Recent research shows that providing intensive care imposes a strong burden on informal carers and concludes that it is necessary to look at how they can be supported professionally

(van Male et al., 2010). Moreover, the elderly who are not able to live independently and become institutionalised are in a worse condition than before and in need of more intensive and extensive care. And, even when they are institutionalised, we have to avoid feeling that they have been set aside by society; social participation remains important. There seems to be a tension between "the need to look after the elderly" and "the need to allow the elderly to look after themselves." Hence, research is needed about the consequences for service delivery, the job requirements of healthcare professionals, the organisation of care and its financing.

5.5 Pensioners

The most discussed consequence of the ageing society today is the pressure on the financing of pensions. In the Netherlands, a first state-pension system was introduced shortly after WWII by Willem Drees, then our Minister-President, who observed that many of the elderly lived in poverty and were dependent on charity. In 1957, a law was passed in parliament (AOW), introducing a state pension for everyone at the age of 65. The system is based on solidarity, which means that every working person pays a monthly premium to cover the cost of pensions. But two major changes have occurred since then.

Firstly, the number of years that a person is expected to live after the age of 65 has increased between 1950 and 2010 from 14 to 19 years for males and from 16 to 22 years for females (van der Lecq, 2010). Hence the period of pension payment has increased by 5 and 7 years, respectively. The second change relates to the ratio between premium payers and AOW receivers. In the 1950s, the state provided pensions to about 730,500 people. Today this number has increased to about 3 million, and, due to the baby-boomers, the number will further increase (van Oorschot & Boos, 1999; van de Lecq, 2010). This "double extra burden" has to be carried by a relatively small group, since the proportion of people aged over 65 in society is increasing.

One way to deal with the higher expenditure is to reduce the pay-out time. Throughout Europe, plans are being made to increase the retirement age by two years (e.g. from 65 to 67). The consequences for health and perception of quality of life for employees are not clear yet. In view of the previously mentioned point

about the benefit of being responsible for something, these consequences may be of a positive nature. Likewise, there is a need to clarify the consequences of longer employment for employers (Vaandrager & van der Maas, 2006). Employers will have to organise meaningful work, adapted to the possibilities of older persons in such a way that it leads to positive outcomes for both the individual and the organisation (Withag et al., 1987).

6. Research approach

In my opinion, Health and Society, with a focus on the interaction between the individual and the social and physical environment, is an important domain that can contribute to individual and population health and well-being, and consequently to a productive society. In the Netherlands and in many other countries in Europe and further afield, a lot of research is being conducted about the advancement of health. At policy level, many discussions are taking place about health in all types of policies. Professionals explain that they are adopting a health promotion approach. The keywords in each of these areas are: focus on populations instead of on groups at risk, empowerment, participation, and intersectoral work. But ... this is what we find in written documents. In reality, however, whether in research, policy, or practice, health is considered from the perspective of illness and looking for individual and societal risks of disease and disability. Measures of effectiveness focus mostly on short-term changes in knowledge, attitudes, and individual behaviours, and on health outcomes such as reduced blood pressure and cholesterol levels. This implies that the dominant paradigm is biased by the biomedical pathogenic tradition.

However, people do not just have problems, do not just run the risk of becoming ill or impaired. In my opinion, if we *focus* only on problems and risks – whether in research, policy, or practice - we will *find* only problems and risks; but people have many resources and assets that they are eager to share and give to our society. People are willing to take responsibility, willing to contribute to a healthy and liveable society. Not disease but health should be the focus for society. Investing in a healthy population means investing in society. A healthy population is happier, more productive, and a strong driver of economic growth. This line of thought, the so-called salutogenic approach, is my point of departure for research. The salutoge-

nic approach focuses on personal and societal assets, on resources for health, in the drive towards a healthier population.

The research can be situated in the framework of the health development model as designed by Bauer and his colleagues (Bauer et al., 2006), see Figure 2.

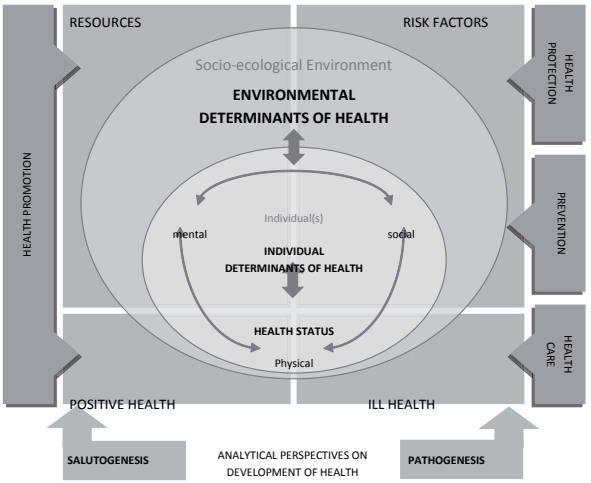

Figure 2: EUPHID Health Development Model

The model places health at the centre, surrounded by the physical, mental, and social dimension, and it shows that the health of individuals results from an ongoing and close interaction with the social and physical environment. The model further demonstrates that health can be analysed from a salutogenic and a pathogenic perspective. Indeed, both perspectives are important. They are complementary, and both can result in programmes focusing on prevention, protection, care, and a health promotion perspective. As Lindström and Erikkson (2010, p. 17) put it: "it is the synthesis and synergy that will be most effective." In our research, we will adopt both approaches, but the salutogenic approach will dominate.

As I have made clear so far, health is a resultant of a variety of individual, social, and environmental inputs. The trend towards non-communicable diseases compels us to consider health from this multilevel perspective. In advancing health, we cannot rely on clinical and behavioural interventions only, we also need interventions addressing the social and physical context. This includes both disciplinary and interdisciplinary knowledge and action. No scientific or professional discipline alone has the theoretical foundation and resources to address the wide range of determinants of health (Green et al., 2001). Action is required from a variety of disciplines, be they social, political, economic, or technical. I usually refer to this approach as coordinated action (cf. Koelen et al., 2008). Therefore, the chair group Health and Society conducts disciplinary, explanatory, and theory-driven research, as well as multi-disciplinary and applied research, in order to provide in-depth knowledge and a scientific basis for the choice and development of interventions for advancing health and well-being. Our research focuses on the social construction and cognitive mechanisms underlying health behaviour, and on the interaction between health, behaviour, and the social and physical environment, with the aim of making these environments supportive to health. Moreover, we address the prerequistes for coordinated action, and its impact on the social and physical environment, but also on the societal and economic impact of such actions. Tools and instruments are being developed, tested, and validated to facilitate and evaluate "supportive environments" and include assessments of quality and quantity of community participation, the functioning of partnerships and coalitions, and processes along which action is taken. By combining a disciplinary approach with an intervention-oriented approach, the research agenda of the chair group fits perfectly in the WUR approach of "science for impact".

Another important issue on the research agenda is the question of research designs. Interventions to promote and advance health are applied in practice. To show whether interventions are effective, the best possible design is the randomised control trial (RCT). Such a design, however, can almost never be used in its pure form in practice, due to, for example, control group problems, multi-layered interventions, etc. (Koelen & Vaandrager, 1995; Koelen et al., 2001). Since evidence from practice contributes importantly to the advancement of theory as well, the development of scientifically sound research methodologies for practice needs further attention. Some research has been done (e.g. Wagemakers et al., 2010a,

2010b), but we will need to extend this towards designs such as time-series, longitudinal studies, cohort studies, and comparative studies.

7. Education

Wageningen University has a good tradition of building thematic study programmes on a multi-disciplinary basis. Study programmes are not based in one single chair group, but are built up with the participation of a variety of groups in social and natural sciences. This enables students to develop expertise in a particular discipline as well as to cooperate with scientists from other disciplines. It has proved to be of great advantage to them when they enter professional life.

The BSc and MSc Health & Society programmes that we offer are unique in the Netherlands. There is strong support from the work field for these programmes because of the unique emphasis on the influence of the social and physical environment on health-related behaviour. There is a need for these skilled scientist in the field. Both programmes have growth potential. I will put a lot of effort into profiling both programmes for potential students.

8. Words of thanks

At the end of my lecture I would like to say some words of thanks.

- Rector Magnificus, members of the Executive Board, members of the Benoemingsadviescommissie, director of the Social Sciences Group: I would like to thank you for establishing the "new kid on the block": the chair Health and Society, and for the responsibility you have given me to develop the group.
- Taking up this position of Professor in Health and Society somehow feels like when I started to work in Wageningen, many years ago, at what was then the Extension Science group. Prof. Niels Röling had just taken up his position as professor and, as he told me, one of his first significant acts was to employ me. I have never regretted this. Niels, you have always been a very inspiring person, both as the leader of the group and as my promoter. You always valued me as a scientist and taught me to look beyond my discipline to develop a broader scientific scope. Thanks for all the support throughout the years.

- Dear Professor Anne van den Ban: in fact you were the one who introduced me to the field of health education. Formally, you left the university when I came in, but actually you have never left. It has always struck me to see how much you know about recent developments in the work field, but also about the latest literature. Even today, you are interested in research and education relating to health education and health promotion.
- Prof. Cees van Woerkum and Prof. Cees Leeuwis from Communication Sciences, the group where I worked before. Both of you stimulated me to develop my own line of research, which gradually shifted from health education into the broader field of health promotion.
- I also wish to acknowledge Prof. Cees de Hoog who regrettably passed away in March 2008. I still miss him. We worked closely together for several years in the development of the Bachelor and Master programmes, Health & Society. Cees had planned to continue looking after the programmes after reaching his retirement age in October 2007. Unfortunately, his health did not allow him to do so.
- Dear Annemarie, Jeanette, Jenneken, Kirsten, Laura, and Lenneke: you offered me a warm welcome when I started on the first of November. All of you are very motivated researchers and inspiring teachers. Equally important, you are supportive of me and of each other, with a great sense of humour. I am sure that together we will make the chair group Health and Society a productive and successful one.
- Lenneke, I have to address you personally. In the last five years, you did a marvellous job in developing the group and holding it together. You attracted research, developed courses, and managed all this in such a way that the group is as it is today.
- Prof. Anke Niehof, you hosted the group in a supportive way. It will be a privilege to work with you and your group in the years to come, not only on the training programmes but also in research.
- Carry, Hedy, and Margaret, we would not have had today's symposium and this inaugural ceremony without your support.
- Dear colleagues from Communication Science, Rural Sociology, Human Nutrition and Epidemiology, and many other groups, in both Wageningen University and universities elsewhere: I always loved to meet and to discuss the newest theoretical developments and the challenges in research. I hope many of

these discussions will follow in the near future.

- A special word of thanks for Hans Saan. Hans, you have always been a critical supporter of our approach towards research and you have been of great help in developing our Health & Society BSc and MSc programmes.
- Dear colleagues from the field: the promotion of health can be studied from behind desks, but the work has to be done where the people live, work, and play. I have learned so much from the interaction and cooperation with you. Without that, I would never have been where I am now. I hope that in the future we will continue our mutual learning processes.
- And then, the inspiring ETC network. I have been involved in this European Training Consortium in Public Health and Health Promotion since its constitution in 1990. Together we develop and teach annual summer schools in health promotion for researchers, policymakers, and professionals in the field of public health and health promotion. This year we celebrate our twenty-first birthday, which is a real performance.
- Prof. Green: what can I say about Larry? You were and still are a leading expert in health education and health promotion. Your support over the years was invaluable for my intellectual development. Many thanks for promoting my views where possible and being critical when needed.
- Dear students: the fact that I call upon you so late doesn't mean you are the least important. On the contrary. Throughout the years, I have loved exchanging ideas and visions. It is always a pleasure to work with you. In general, students are eager to learn, and this is inspiring for us as teachers. The field needs such motivated researchers and professionals.

Last but not least I thank my family and friends, and especially Jan and Corrie, for their unconditional support. Life is not just work. Thanks to you, I take time for social talk, time to party, time to travel, time to experience culture, time to take a ride on the motorbike, time to jump into the sea, time to work in the garden, time to light the Easter fire. Mams, I am happy that you are here to represent our parents. In our family you are the best example of good practice when it comes to active ageing.

Ik heb gezegd.

References

Actuarieel Genootschap (2010). *AG Prognose tafel 2010 – 2060*. Augustus 2010. Retrieved from www.ag-ai.nl on 21-12-2010.

Bauer G, Davies JK & Pelikan J on behalf of the Euhpid Theory Working Group and The Euhpid Consortium (2006). The EUHPID Health Development Model for the classification of public health indicators. *Health Promotion International, 21* (2), 153-159.

Bouwman L, te Molder H, Koelen M & van Woerkum C (2009). I eat healthfully but I am not a freak. Consumers' everyday life perspective on healthful eating. *Appetite, 53* (3), 390-398.

Brownson RC, Hoehner CM, Day K, Forsyth A & Sallis JF (2009). Measuring the built environment for physical activity. State of science. *American Journal of Preventive Medicine*, 36 (4S), S99-S123.

Byrant L, Corbett K & Kutner J (2001). In their own words: a model of healthy ageing. *Social Science and Medicine, 53* (7), 927-941.

CBS-StatLine (2010). Overlevingstafels; geslacht en leeftijd. Retrieved from http://statline.cbs.nl/StatWeb/publication on 10-1-2011.

de Hoog C (2007). *Is het gezin op weg naar het einde?* Afscheidsrede uitgesproken op 18 oktober 2007 uitgesproken in de Aula van de Wageningen Universiteit.

Flegal KM, Carroll MD, Ogden CL & Curtin LR (2010). Prevalence and trends in obesity among US adults 1999-2008. *Journal of the American Medical Association, 303* (3), 235-241.

Flick U, Fischer C, Neuber A, Schwartz F & Walter U (2003). Health in the context of growing old: social representations of health. *Journal of Health Psychology, 8* (5), 539-556.

Green L, Daniel M & Novick L (2001). Partnerships and coalitions for community-based research. *Public Health Report*, 116 (Suppl. 1), 20-31.

Hulshof KFAM, Ocke MC, van Rossum CMT, Buurma-Rethans EJM, Brants HAM, Drijvers JJMM & ter Doest D (2004). *Resultaten van de voedselconsumptiepeiling 2003*. Bilthoven: RIVM/TNO.

Idler EL & Benyamini Y (1997). Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health and Social Behavior, 38* (1), 21-37.

Koelen MA (2007a). De zin en onzin van consumentenvoorlichting in de strijd

tegen obestitas. In: Munnichs, G & Dagevos, H (Eds.) *De obesogene samenleving*. Amsterdam: Amsterdam University Press, pp. 119-125.
Koelen MA (2007b). Lifestyle and health. In: Moerbeek H, Niehof A & van Ophem J. (Eds.) *Changing families and their lifestyles*. Mansholt publication series, volume 5. Wageningen: Wageningen Academic Publishers, pp. 295-203.
Koelen, MA & Lindström, B. (2005). Making healthy choices easy choices: the role of empowerment. *European Journal of Clinical Nutrition, 59* (Suppl. 1), 10-16.
Koelen MA & Vaandrager L (1995). Health promotion requires innovative research techniques. In: Bruce N, Springett J, Hotchkiss J, Scott-Samuel J (Eds.) *Research and change in urban community health*. Alderslot: Avebury Ashgate Publishing Limited, pp. 67-76.
Koelen, MA & van den Ban, AW (2004). *Health education and health promotion*. Wageningen: Wageningen Academic Publishers.
Koelen MA, Vaandrager L & Colomér C (2001). Health promotion research: dilemmas and challenges. *Journal of Epidemiology and Community Health, 55* (4), 257-262.
Koelen MA, Vaandrager L & Wagemakers A (2008). What is needed for coordinated action for health? *Family Practice, 25* (1), i25-i31.
Kuh D & Ben-Shlomo Y. (2004). *A life course approach to chronic disease epidemiology*. Oxford: Oxford University Press.
Lindström B & Erikkson M (2010). *The hitchhiker's guide to salutogenesis*. Helsinki: Folkhalsan Research Centre, Health Promotion Research and the UIHPE Global Working Group on Salutogenesis.
Naaldenberg J, Vaandrager L, Koelen MA & Leeuwis C. In Press. Ageing populations' everyday life perspectives on healthy ageing: new insights for policy and strategies at the local level. *Applied Gerontology*.
Niehof, A. (2004). The micro-ecological approach to home care. Can it contribute to the promotion of health? *Medische Antropologie, 16* (2), 245-265.
Northridge ME, Sclar ED & Biswas P (2003). Sorting out the connections between the built environment and health: a conceptual framework for navigating pathways and planning healthy cities. J*ournal of Urban Health, 80* (4), 556-568.
Rodin J & Langer EJ (1977). Long-term effects of a control-relevant intervention

with the institutionalized aged. *Journal of Personality and Social Psychology, 35* (12), 897-902.
Sadiraj K, Timmermans J, Ras M & de Boer A (2009). *De toekomst van de mantelzorg.* Den Haag: Sociaal Cultureel Planbureau
van der Lecq SG (2010). Minder AOW, meer Drees. T*ijdschrift voor Openbare Financiën, 42* (2), 154-162.
van der Lucht F & Polder JJ (2010). V*an gezond naar beter. Volksgezondheid Toekomstverkenning 2010*. Bilthoven: RIVM Rapport 270061005.
van Male J, Duimel M & de Boer A (2010). *Iemand moet het doen: ervaringen van verzorgers van partners.* Den Haag: Sociaal Cultureel Planbureau.
van Oorschot W & Boos C (1999). Dutch pension policy and the ageing of the population. *European Journal of Social Security, 1* (3), 295-311.
VCP (1998). *Rapportage voedselconsumptiepeilingen VCP-3: 10 jaar trend.* Zeist: TNO Voeding.
Verkooijen, KT, de Vries, NK & Nielsen, GA (2007). Youth crowds and substance use: the impact of perceived group norm and multiple group identification. *Psychology of Addictive Behaviors, 21* (1), 55-61.
Vaandrager, L & van der Maas, E (2006). 'The Netherlands' in: Healthy work in an ageing Europe. In: Boukal C & Meggeneder O (Eds.) *A European collection of measures for promoting the health of ageing employees at the workplace.* Frankfurt am Main: Mabuse-Verlag GmbH, pp. 217-235.
Wagemakers A, Koelen M, Lezwijn J & Vaandrager L (2010a). Coordinated action checklist: a tool for partnerships to facilitate and evaluate community health promotion. *Global Health Promotion, 17* (3), 17-28.
Wagemakers A, Vaandrager L, Koelen M, Saan H & Leeuwis C (2010b). Community health promotion: a framework to facilitate and evaluate supportive social environments for health. *Evaluation and Programme Planning, 33* (4), 428-435.
Wendel-Vos W, Droomers M, Kremers S, Brug J & van Lenthe F (2007). Potential environmental determinants of physical activity in adults. A systematic review. *Obesity Reviews, 8* (5), 425-440.
WHO (2004) *Global strategy on diet, physical activity and health*. Geneva: World Health Organisation.
WHO (2006). *Working together for health*. The World Health Report 2006.

Geneva: World Health Organisation.
Withag, JG. Nauta, R & Koelen, MA (1987). Ziekteverzuim en de inertie van organisaties. *GVO-Preventie, 8* (1), 3-8.