It’s a small world after all

Vossiuspers UvA
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It's a small world after all

Inaugural Lecture

Delivered
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Tropical Child Health
of the University of Amsterdam
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by

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Geachte mijnheer de Rector Magnificus,
Leden van de Raad van Bestuur van het Academisch Medisch Centrum,
Leden van het Bestuur van de Stichting Derde Wereld Kind,
Hoogleraren van de Universiteit van Amsterdam en van de zusterfaculteiten,
Lieve familie, beste collega's, studenten en vrienden,
Dames en heren,

Met bijzonder veel genoegen aanvaard ik vanmiddag in het openbaar het ambt van hoogleraar in de Tropische Kindergeneeskunde.

Introduction

I would like to start with a coincidence. Life is full of coincidences and it was one of these which explains why I am standing here today talking to you about tropical child health. For this inaugural lecture, I've chosen the title *It's a small world after all* partly because tropical child health needs to be thought of in a global context, but also because chance happenings, which enable initiatives to develop, sometimes occur across huge distances. Let me start with one of those coincidences. It goes back nearly 25 years and was the chance meeting of Professor Lex Muller – Professor of Tropical Hygiene, University of Amsterdam, and Professor John Waterlow, of Dept of Nutrition, London School of Hygiene and Tropical Medicine. These two met in a bar in Sweden. Professor Muller mentioned to Professor Waterlow that there was a search on for a paediatrician to work at the Royal Tropical Instituite, with a special interest in Nutrition. News of this was sent to me by Professor Waterlow. It was through this chance meeting of a Dutchman and an Englishman that I was appointed in 1979 to a staff position in the Dept of Nutrition at the Royal Tropical Institute. If it were not for that meeting I would not have the privilege of standing here now.

The work at the Royal Tropical Insititute had its own demands and for relaxation, my wife Loretta suggested that I build a Dutch doll's house – an *Amsterdams grachtenhuis* – for our two daughters. Now a job in tropical child health and paediatrics is a mobile activity, requiring travel overseas, also for the family, and for this reason Loretta suggested I make the house so it can be assembled and taken apart. It may be a little unusual on a formal occasion like this, but I would like to use the assembling of that Dolls house as an analogy for this Dutch initiative in establishing a Chair at the University of Amsterdam in Tropical Paediatrics and as an analogy for the basis of a Dutch perspective for a structure to tropical paediatrics.

To assist in illustrating this analogy my son, Luke, will assemble the house on this table as I relate my thoughts on the development of tropical paediatrics in the Netherlands to its construction.

The *grachtenhuis* representing tropical paediatrics

Het is misschien ongebruikelijk bij een formele gelegenheid zoals deze, maar ik wil de opbouw van een poppenhuis als een analogie gebruiken voor dit Nederlandse initiatief voor het instellen van een leerstoel in de tropische kindergeneeskunde aan de Universiteit van Amsterdam. Mijn zoon Luke zal mij helpen bij de opbouw.

Foundation

What is the foundation, and what are the principles on which to consider the ideas behind the development of tropical paediatrics and child health. Firstly, the idea that tropical paediatrics is ordinary paediatrics in the tropics is very wrong – at worst it is possibly dangerous. It is sometimes viewed that what developing countries need is good medicine practised on western lines. What is good for the west is not equally good for everyone else.

The major problem of the doctor in the developing world is not only the cure of the sick, but also the prevention of disease, not merely in the individual but in the community. This is the major pattern of what we call tropical paediatrics.[1] The long term aim is to get rid of the diseases affecting children, not to go on treating people who are sick because of them. We need to turn off the taps causing the water in the bath to overflow, and not simply mop it up from the floor. Prevention is better than cure! *Voorkomen is beter dan genezen!*

Thus in tropical paediatrics there is a balance between curative and preventive medicine which differs from the sophisticated western model.[2] Modern tropical paediatrics is multidisciplinary and this is an aspect I'll return to later. Within the scientific age it has blossomed and the discoveries made in this field rank among the highest achievements in science and human intellect. Tropical paediatrics is a vast and great discipline and there is a challenging road ahead. It has ceased also to be just a problem in the tropics, as millions of people nowadays move in and out of tropical areas. I urge all who think of becoming engaged in this field to evoke that spirit of elan and intellectual adventure which imbued the pioneers of this field.[3]

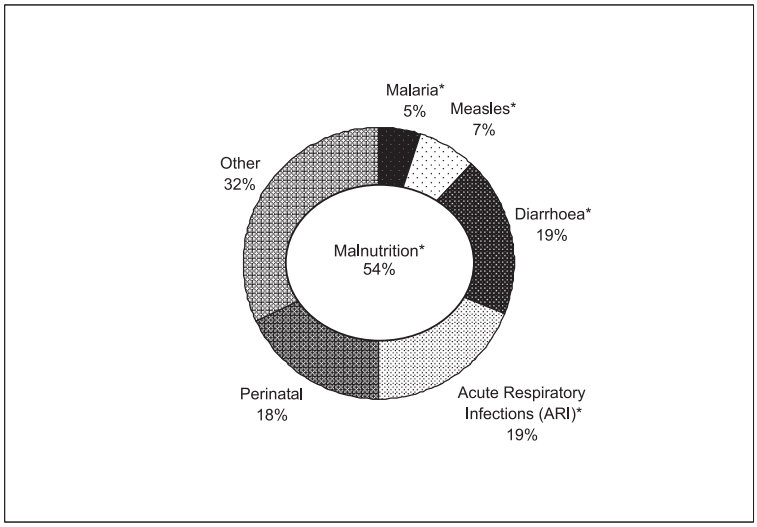
Global health

Let us have a brief look at what is happening to children's health in the world and some child health statistics. In certain ways these numbers are becoming familiar to us all.[4] Millions of children live in circumstances which place their survival, protection and development at significant risk. One in four live in unsuitable conditions. 250 million work in hazardous and exploiting labour. 130 million have no access to education. In sub-Saharan Africa there are ten million AIDS orphans. A January 2001 estimate recorded that each year about eleven million children die before reaching their fifth birthday – of these eight million are infants and 3.4 million are babies in the first year of life. More than 98% of these deaths occur in less developed countries and in Africa, 80% occur before a child reaches a health facility.

Against this background there have been significant achievements and sustained international efforts. WHO has established targets related to Health for All, including one which realistically may be achieved – the elimination of paralytic polio in the next few years. A number of international development targets have been agreed by the United Nations.[5] Two of the most important are the reduction by two thirds in the mortality rates for infants and children under the age of five by 2015 and the reduction by half of people living in extreme poverty also by 2020.

Much of this effort has had a community basis, linked to the implementation of primary health care. More recently a strategy for improving the diagnosis of childhood illness, called Integrated Management of Childhood Illness (IMCI), has been promoted.[6] The basis for this is the fact that approximately 70% of all childhood deaths are associated with one or more of these five conditions – malaria (5%), measles (7%), diarrhoea (19%), acute respiratory infections (19%), perinatal complications (18%). Half of these are complicated by malnutrition, which is shown by the inner circle overlapping all five conditions in this pie chart (figure p. 9). The IMCI strategy is based on simple procedures for assessment and referral by health workers.

However, up to one third of children seen in IMCI clinics still will require a referral for further assessment and possible hospital admission. Here we meet a real difficulty. A recent assessment of hospital facilities in seven less developed countries showed that the quality of hospital care for seriously ill children is greatly affected by the following:[7]



Distribution of 11.6 million deaths among children less than five years old in developing countries.

1. Poorly organised and delayed triage
2. Inappropriate inpatient or emergency treatment
3. Poor monitoring of patients
4. Inadequate training of physicians and nurses
5. Lack of guidelines for standard case management
6. Sporadic lack of essential drugs
7. Understaffing, particualrly at night

It is hard not to conclude that the majority of children, despite international initiatives of the larger institutions, do not have access to simple and affordable health care. And yet this is an essential part of their fundamental human right. Smaller development organisations and private initiatives can play an important role. A very practical example of a response to these limitations is the Child Friendly Health Care Initiative promoted by Child Advocacy International which outlines the principles of hospital care the world over.[8] Another is the development of Standard Care Management Guidelines in Tanzania, as facilitated by the Stichting Gezondheid Derde Wereld Kind.[9] These facts that I've been giving you are reasons for building

an initiative in tropical paediatrics – which takes me back to where I began in Holland and where this Doll's House started. Most things are a learning process, including making a house. Let's look at a first stage – paediatric education.

Het is een open deur om te stellen dat de meerderheid van de kinderen, ondanks hulp van allerlei internationale instellingen zoals UNICEF, geen toegang hebben tot de eenvoudigste voorzieningen waarop zij recht hebben.

Genoemde feiten zijn de reden voor het opzetten van een initiatief op het gebied van tropische kindergeneeskunde. Dit brengt mij terug tot de tijd dat ik hier in Nederland begon, waar de fundamenten van dit poppenhuis gelegd werden. Laten wij eerst kijken naar de begane grond: het opleiden van de kinderartsen.

Paediatric education

In accepting this appointment in Amsterdam I can't hide the fact that the University selected someone from Liverpool. Liverpool is most famous for these young men – the Beatles, but it is also well known as the city which opened the first School of Tropical Medicine in the world, which was founded in Liverpool in 1898.

The original prospectus stated that its mission was 'the training of MEN in the special subject of Tropical Medicine'. It was three years before women were admitted for this training. Arguably, tropical paediatrics would be much further ahead if they had started first of all with women. The Tropical School in Liverpool and the Royal Tropical Institute have been vital to the promotion, organisation and training in Tropical health over the years since those early days.[10]

But what constitutes adequate training? Few countries have done more for tropical education worldwide than the Netherlands. Amsterdam has a proven reputation and it is with some trepidation that I make specific suggestions on training in tropical health in this city and gathering. A first point to make is that there is a need to expose paediatricians to issues in tropical paediatrics and child health during their formal specialist training.[11] This also relates to the fact that many children are immigrants and from overseas. In the last two years a new Certificate Course in Tropical Paediatrics has been established for Dutch paediatric residents, which is organised by the Emma Kinderziekenhuis, the Liverpool School of Tropical Medi-

cine and the Stichting Gezondheid Derde Wereld Kind. This course is accredited for continuing medical education by the Nederlands Vereniging voor Kindergeneeskunde. Today gives me an opportunity to thank those from the Netherlands and Liverpool, many of whom are here today, who have helped to make this course possible, and to thank students who have participated. I consider tropical paediatrics an essential part of their post-graduate specialisation.

Ik beschouw tropische kindergeneeskunde als een essentieel deel van de opleiding van kinderartsen.

This teaching curriculum involves helping those doctors keep pace with:

- New management techniques
- Expectations in medical care
- Prevalence of tropical paediatric disease
- Practical constraints
- Basic laboratory tests and knowledge of tools and techniques and
- Integration of curative and preventive care

I wonder which of the doctors who have already undertaken this course will still be in this field of work in ten or twenty years time?

A component of this teaching initiative is to create links with paediatricians in developing countries in order to develop project options for those who intend to gain experience and work in developing countries and to achieve an insight into where the action really is.

The distinguished Dutch nutritionist, the late Professor H.A.P.C. Oomen, once told me that to develop a successful project overseas four essential things are required. Firstly, the idea, secondly the right student/investigator, thirdly the right field location and lastly, the money. Contrary to popular belief getting the money is not the most important, nor the first step. One of our main field locations is in Malawi, where we have had long-term collaborative paediatric links with Professor Robin Broadhead, and it is hoped a number of Dutch paediatricians will take up opportunities to work there in the next few years.

In the last year, during my visits to Amsterdam, several young investigators have approached me with questions on how to go about setting up a project in a develop-

ing country and what they can expect to be the hurdles to overcome. These are some of the stages they may pass through in the process.

1. Enthusiasm
2. Disillusionment
3. Panic!
4. Search for the guilty
5. Punishment of the innocent
6. Praise and honour for the non-participants.

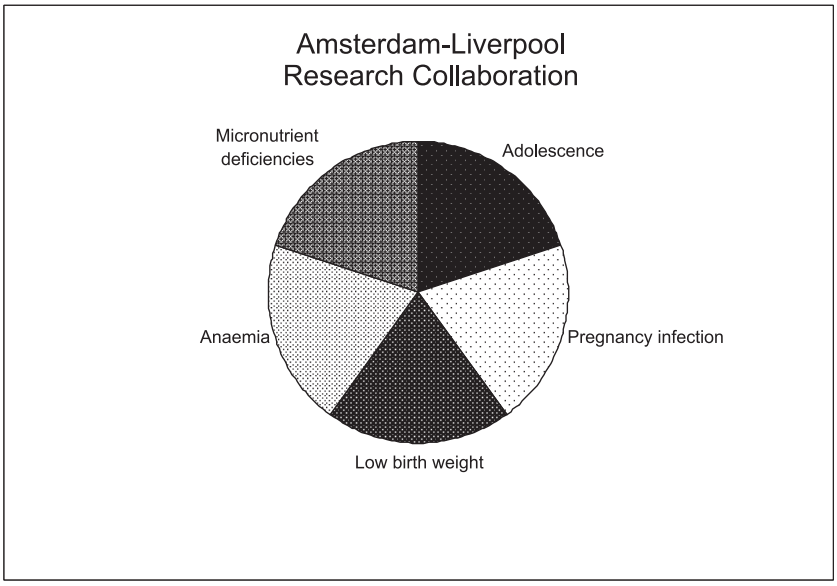
Perhaps a further one to add to this list would be – failure to keep a sense of humour. But the point is that everyone learns through experience. Encouraging young doctors is one of the most important steps in building up tropical paediatrics. Having learnt through my mistakes on the ground floor of this house, let's move upward and tackle a second stage.

Het aanmoedigen van jonge artsen is een belangrijke stap in de opbouw van de expertise van tropische kindergeneeskunde. Laten wij, nadat wij door vallen en opstaan wat wijzer zijn geworden, de trap nemen naar de eerste verdieping.

Dutch/UK collaborative initiative

This next stage in our building programme relates to fostering research. A Dutch-UK research strategy has been developed as an initiative related to establishing the Chair of Tropical Paediatrics at the University of Amsterdam. A research strategy is essential because we know that less than 10% of global spending on health research is devoted to diseases or conditions that account for 90% of the global disease burden.[12]

Five areas have been prioritised which I've illustrated in this pie chart (figure p. 13). The intention is to develop a programme of activities, which focuses on the cycle of life from pregnancy, to early life, to childhood, to adolescence. The focus will address key research themes in each of these periods in the life of the child: pregnancy infection, low birthweight, anaemia, micronutrient deficiency and adolescence. The inner circle may be viewed as representing the continuity from pregnancy through to adolescence in this cycle. The outer circle enclosing the pie chart



may be viewed as the socio-cultural context or the traditional practices within which all problems in tropical child health should be considered.

Several Dutch and UK collaborators are involved in helping to develop each of these thematic areas, with a Dutch and UK co-ordinator for each research theme. In this joint approach we hope to increase our fund of ideas as well as our chances of obtaining research funding. Some progress has already been made. A grant application to the European Union for a Concerted Action on Control of Pregnancy Malaria and Anaemia, which involves four European and five developing countries, has been funded by the European Commission for a three year period.

Control of malaria in pregnancy is one of the main priorities of the WHO Roll Back Malaria (RBM) initiative as malaria in pregnancy affects 40% of the world's pregnant population and it is viewed as a major cause of maternal and neonatal mortality in malarious areas. Malaria in pregnancy has been an important priority for research by Dutch investigators for many years. To my knowledge there have been more Dutch *proefschriften* on this topic than from any other country in the world. My own interest in this topic was generated after reading the Dutch PhD of the late Dr. Franciscus Kortmann which was published in 1972 by this University.[13] The real

drama of malaria in pregnancy occurs in the placenta where you can find almost a pure culture of malaria parasites in the maternal intervillous spaces. The main problem which results from this is low birthweight – babies are born both too soon and too small. As a result, malaria is the commonest cause of low birthweight in first pregnancies in malarious areas. The World Summit for children in 1990 recommended that low birthweight is reduced to less than 10% of deliveries but no recommendations were made on how to achieve this. This is why this area of research is so important.

Another of our collaborative research areas is anaemia. Dr. Michael B. van Hensbroek from the Emma Kinderziekenhuis has recently developed a major four-year proposal which has been funded by the UK Wellcome Trust as a collaborative activity with the Liverpool School of Tropical Medicine, the Medical College and the Wellcome Trust Unit in Malawi, the Central Blood Transfusion Service in Amsterdam and the University of Oxford. The project includes fundamental research on genetic factors related to the predisposition to severe anaemia in young children in developing countries. Such basic scientific research is necessary as we don't have the answers to explain the mechanisms leading to severe anaemia which is an important associated cause of mortality in children.

We also plan new initiatives on micronutrient deficiency, in particular rickets and zinc deficiency and Dr. Paul Prinsen Geerligs has completed an innovative trial in rural Malawi of preparing food cooked in iron pots, which significantly improved iron status and haemoglobin values within six weeks of use.[14]

The process of establishing research and looking for solutions is exciting, but very often, what seems an obvious solution runs into all sorts of difficulties when you try to implement it. One of the main obstacles which seems to often hold back development in this way is cultural barriers – which brings me to the third stage of our initiative.

Het opzetten van onderzoek en het zoeken van oplossingen zijn stimulerende aangelegenheden, en misschien wel het eenvoudigste uit te voeren. De moeilijkheden komen pas wanneer je zelfs de eenvoudigste oplossingen wilt implementeren. Culturele barrières zijn soms onoverkomelijke hindernissen die ontwikkeling tegenhouden. Dit brengt mij naar de tweede verdieping van ons huis.

Cultural background to Tropical Child Health

A complete picture of Tropical Child Health must take into consideration cultural, social and ethical issues. Attitudes to the sick child depend closely on how, within the context of each culture, one feels, thinks, spells and writes about the child in general, or particularly in a Dutch idiom, how one paints the child. In short, the social position of the child in the family. This relates to the importance of providing health care in the home.

Als wij kijken naar de gezondheidsaspecten van het kind, dan kunnen wij deze niet los zien van zijn omgeving.

Important work has been conducted in this area by Dutch anthropologists such as the seminal work of Professor Corlien Varkevisser of this University on socialisation in a changing society, which addresses Sukoma childhood in rural and urban Tanzania.[15] Arguably there is no agreed framework to guide us on these cultural issues and as a result, many child health problems are approached in terms of specific disease entities, divorced from their cultural setting. For example, neonatal tetanus remains a major cause of neonatal death in at least twelve developing countries. Yet this is a social disease primarily related to a lack of understanding about clean cord care.

Another important factor is traditional healing – which I can illustrate no better than with an example I've borrowed from Professor Ralph Hendrickse, which advertises the skills of a Nigerian quack doctor. The text reads:

> *Contact Professor Prince Dr. Ademiluyi*
> For any diseases of TB, cough, veneral disease, eyesight trouble, who will be cured as a play of magic, and barren women will be born a perfect healthy child within the shortest time of treatment.
>
> The doctor also undertakes reading of the stars and can tell you how many wives you will have so that your worries are ended.

If Professor Ademiluyi was giving this talk today he would need to be a Harry Potter wizard to magic all these results.

We are currently working with some of these problems through an adolescent literacy programme in southern Malawi which, by offering health promotion

through literacy training of adolescent girls in rural villages, is trying to address some of these issues. A main focus of the programme is HIV prevention and health seeking behaviour. This is an area where 25% of these girls are HIV-infected and the risk of an infection for many of these girls is like a game of chance. When you have no knowledge or understanding, getting HIV and AIDS is like the throwing of a dice. If we want to change behaviour, one of the best ages to start is adolescence, although many paediatricians still consider childhood principally as including children less than five years. We have to remind ourselves that UNICEF defines children as those below nineteen years of age.

Addressing the issues of HIV infection and reducing exposure of babies to HIV is a major challenge to tropical paediatrics.[16] In order to reduce HIV transmission through breastmilk, UNICEF recommends not breast-feeding in areas where it is safe to use formula. This is not a realistic option in most African communities. However, by addressing all the factors known to be associated with reducing mother to child transmission of HIV it may be possible to get this rate down to about 8% in Africa.

Attic

Ten slotte.

We have reached the attic. When you reach the top of the house you can see a longer way and more than the immediate surroundings – in other words you have a wider vision.

Als je vanaf de bovenste verdieping naar buiten kijkt, dan kun je verder zien en meer van de omgeving opnemen.

The emphasis of this talk, whether related to teaching or research, is on the needs and priorities of the South. Many of these countries are completely dependent on donors and scientific co-operation with northern partners. Perhaps we should change the name of tropical paediatrics into 'Paediatrics in a not so ideal world' based on southern realities rather than northern 'scientific' ideologies.

The international community must expect to provide support for paediatric priorities in the developing world. Less developed countries should not be seen as recipients of charitable handouts but as partners in addressing these priorities.[17] Information exchange can play a valuable role in facilitating this. In Liverpool we publish the journal called *Annals of Tropical Paediatrics* and *International Child Health*, which is edited by Professor Hendrickse, who I'm very pleased is here today, and this is a valuable vehicle for such information exchange. The electonic revolution is further helping us to narrow the widening communication gap between the north and south. There is a need to develop new communication initiatives, which the Amsterdam/Liverpool link has helped to strengthen with this new chair in Tropical Paediatrics. There are opportunities for this not only between north and south, but also between the Netherlands and the United Kingdom. We have reached the attic. It may be a favourite place for the children to hide, but we cannot hide in it. The challenge is to look over the barriers, and dare to care.

Wij hebben de top van het huis bereikt. De zolder mag dan een plek zijn waar kinderen zich graag verstoppen, maar dat is niet voor ons weggelegd. Wij moeten naar buiten kijken om over de schuttingen heen te kijken.

Dankwoord

Aan het eind gekomen van deze rede wil ik enkele woorden van dank uitspreken. Ik spreek mijn oprechte dank uit aan u voor het vertrouwen dat u in mij bleek te hebben, door mij te benoemen op de leerstoel Tropische kindergeneeskunde. Ik maak graag van deze gelegenheid gebruik om een aantal personen en instanties in het openbaar te bedanken omdat zij het voor mij mogelijk gemaakt hebben dit huis te bouwen.

Graag zeg ik dank aan de collegae van de zusterfaculteiten, professor Hugo van de Kaay en professor Jan Maarten Wit uit Leiden, professor Tom Schulpen uit Utrecht, en dr. Jules Tolboon uit Nijmegen. Ik wil ook dankzeggen aan de medewerkers van de Stichting Gezondheid Derde Wereld Kind, met name dr. Jaap Mulder – vandaag hier aanwezig – voor de inspanningen die hij heeft verricht om een bijzondere leerstoel in te stellen. Het College van Bestuur van de Universiteit van Amsterdam en de Raad van Bestuur van het AMC dank ik voor het in mij

gestelde vertrouwen door mij te benoemen als hoogleraar in de tropische kindergeneeskunde.

Mijn leerstoel is ondergebracht in het Emma Kinderziekenhuis, geleid door professor Hugo Heymans. Ik ben zéér onder de indruk van zijn visie en enthousiasme. Ik verheug me op onze toekomstige samenwerking.

Hooggeleerden Piet Kager en Kees de Groot. Jullie wil ik bedanken voor de optimale steun die jullie mij gegeven hebben. In het bijzonder wil ik ook dr. Teunis Eggelte bedanken voor de jarenlange vriendschap en steun die hij mij gegeven heeft, en ook voor het helpen bij de voorbereiding van deze lezing.

Ik bezet deze leerstoel slechts drie maanden per jaar. De andere werkdagen breng ik nog steeds door bij mijn Liverpool en Malawi collegae.

In particular, Professors Tony Hart and Robin Broadhead and doctors Fletcher Coulter, Cuevas and Bunn. I am happy that most of them are present here today and can see me working in a different role. From Liverpool to Amsterdam is a small step and as you have seen I have both a Dutch house and an English house, but I hope the Amsterdam house will get a little bigger than our model.

I would like to thank my parents for all they did for me over the years. I am sorry that they did not live to attend this occasion.

Finally I would like to thank my family – Melanie, Elinor, Luke my house builder, and André, and Loretta my wife, for all your love, support and patience over the years. My family is the world in which I build my work – it's a small world after all.

Ik heb gezegd.

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