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Historical tradition and contemporary approaches

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& Annet van Royen-Kerkhof (eds.)

Dedicated to Prof. dr. Arno Hoes
for his foundational work on
The New Utrecht School

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Foreword

Carina Hilders and
Wilco Hazeleger

The New Utrecht School and Open Science:

Continuing traditions while exploring new approaches

In this foreword to a somewhat revised English version of the earlier book on The New Utrecht School, we want to build further on some of the work of our predecessors. In the foreword to the previous edition, Henk Kummeling pointed out that in his view universities had historically taken a wrong direction by separating education from research as core academic tasks. He also indicated that he regarded The New Utrecht School as an important exponent of the Open Science movement in Utrecht, which tries to reconnect education and research directly to societal relevance. In their epilogue, Margriet Schneider and Arno Hoes agreed with him that – based on the principals of Open Science – The New Utrecht School should be seen as a flagship for future-proof academia. They also suggested to further stimulate this development by establishing *The New Utrecht School for Advanced Study* as an internationally recognizable symbol for the transdisciplinary collaboration within Utrecht University, the HKU University of the Arts Utrecht and the University Medical Center Utrecht. Here, we want to very briefly explore what type of matters would need to be tackled at such a center in the quite specific and unique context of Open Science in Utrecht.

It is clear that the world is confronted with major wicked problems. The present unrest and uncertainty in the educational and research systems exacerbates the scientific and scholarly tackling of these complex societal issues. There are growing concerns for the closing of science as it relates to data-availability, review processes, independent and free education, funding resources, inclusivity in assessments, publication options and decreasing public trust among many others concerns. To put matters bluntly, academic freedom is under serious threat. The Institutes for Advanced Study (IAS), of which there are now an estimated 150 worldwide – with the Princeton institute as its most famous example [1] – have often been characterized as the ultimate defenders of academic freedom. Indeed, the defining feature of the IAS has always been to provide an independent place where (visiting and international) fellows have the space and time to focus purely on (fundamental) research of their own design, in freedom from such demands as teaching, supervision, attending meetings, serving on committees, administration, governance, consulting, and other societal duties. Still, this rather "negatively" defined view of academic freedom – in Isaiah Berlin's conceptualization, a 'liberty from' interference and the absence of constraints, rather than a "positive" self-definition – has little to do with the role of universities as open democratic institutions, striving for structural change. Open Science in contrast, represents a fundamental cultural transformation in academia, starting from the way in which we create, store, share, value and deliver the outputs of academic activity. While for those working in the research and education communities in Utrecht, these aspects should already be considered as the new standard, Open Science also makes a substantive call to reexamine the traditional ways in which we think of research in its intrinsic relation to other elements of academia, such as education, public engagement, and public–private and not-for-profit partnerships [2]. Therefore – if we are to think of an Utrecht version of an institute for advanced study – it should be clear that we need to go far beyond the classical IAS-models, and have to implement it to truly further our shared strategic aim to connect education, research and society.

In the current academic culture, teaching is often seen as less important than research [3]. Yet, the idea that research and teaching are intrinsically intertwined is in no way a new concept. With that in mind, Open Science should not be regarded as solely a research movement, which does not encompass education and public engagement. For example, it is increasingly recognized that research-based education can be a two-way street, potentially benefiting not only students but also researchers by developing student-staff communities in higher education. As just one illustration – and there are many more – an Open Science area where reciprocal research-based education is making particular headway is in the domain of translational medicine [4]. Translational medicine tries to bridge the continuum from basic science to clinical practice in order to benefit patients and society. In some novel educational innovations in translational medicine in Utrecht, interdisciplinary groups of sometimes over 600 students are now challenged to work on real-life questions presented by patients with as of yet poorly understood health problems (see Bovenschen & Ter Meulen-De Jong, this book). By working in student research-hubs related to the fields of medical science, biotechnology, clinical health sciences, epidemiology, the social sciences and the humanities i.a. and having regular cross-disciplinary meetings throughout courses, students can do their own scientific, clinical and scholarly work and combine this to attain transdisciplinary goals. Such student hubs can extend to our (inter)national networks, for example in our strategic alliance with Eindhoven and Wageningen, and CHARM-EU [5]. By addressing real-world challenges introduced by patients and society, students not only learn the new communicative, collaborative, critical thinking and creative problem-solving skills in line with the graduate attributes of the actualized Utrecht educational model, but can also help to produce new knowledge and research lines – thereby advancing science.

The science-to-science dialogue on the relation of research to education – though perhaps somewhat commonly neglected – needs to become more central in our communities. Still, the real challenge might lie in discovering new ways to open up science-and-society dialogues. We believe that our institutions find their unique value by counteracting all too common short-cycle action by providing autonomous places for long-term scientific projects, which can act as catalysts for innovation and the smart specialization of regions. It is immensely important to be able to do this apart from external financial, social and political pressures. Yet, we can only attain and uphold our intrinsic value when we realize that we have an immense societal responsibility to link science and everyday practice, and to also

include people and groups in this dialogue for whom the value of autonomy is perhaps less self-evident. When communicating about science, a model of authoritatively sending information is clearly outdated. In order to make a true connection between pluriform worlds, we need to be humble, open and curious and must include a multiplicity of voices of citizens, citizen-groups, scientists, artists, professionals and diverse societal stakeholders in order to arrive at authentic reciprocal relations. With its firm base in education and public dialogue, The New Utrecht School – as the broad and comprehensive movement presented in this book – is an exceptional vehicle for continuing our unique academic traditions in Utrecht while exploring new approaches. An institute for advanced study in Utrecht based on the principles of Open Science might well function to further promote transdisciplinary projects on the integration of our educational models to clinical and professional practice, and research in our strategic themes and programs – especially if this can be done in such a way that they might serve as international examples for new European academic identities. We look forward to engaging in the variety of dialogues hosted by The New Utrecht School on this topic during the upcoming lustrum for 390 years of science in Utrecht.

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Introduction

Megan Milota,
Stefan Gaillard,
Annet van Royen-Kerkhof
and Stefan van Geelen

Introduction: The New Utrecht School

The New Utrecht School [1] was established in 2017 as an interinstitutional platform of Utrecht University (UU), the (HKU) University of the Arts Utrecht and the University Medical Center (UMC) Utrecht to foster interdisciplinary collaboration[1] in the field of health. [2] Initially focusing on the health domain, our understanding of this field was broad; it encompassed public health, global health, one health, planetary health, and healthcare. The guiding principle behind the establishment of The New Utrecht School was the need to forge new and stronger partnerships with various institutes through joint interdisciplinary education, artistic research, and public initiatives, thereby making a distinctive contribution to resilient and future-proof academia. The New Utrecht School has achieved an impact well beyond the health domain – as evidenced by the contributions in this volume – and serves as a leading example of how the principles of Open Science can be applied to connect education to research, professional practice and society.

In 2020, The New Utrecht School was incorporated into the UMC Utrecht Strategy 2020–2025, "Connecting Worlds" [3], as well as into Utrecht University's 2025 strategic plan, "Open Mind, Open Attitude, Open Science." [4] There are also many implicit and explicit connections to Utrecht University's new Education Model & Vision. [5] The inter- and transdisciplinary nature of The New Utrecht School is also aligned with the vision and mission of the Strategic EWUU-Alliance, especially the Centre for Unusual Collaborations (CUCo). [6] Multiple collaborators in this volume have participated in this alliance's projects and events, and we are hopeful that such fruitful collaborations will continue.

The New Utrecht School upholds several of the central principles of the historical Utrecht School as it became internationally recognized at Utrecht University between approximately 1945 and 1960; in this sense, we see a direct connection with the values and practices of those who came before us. In this introduction, we will briefly discuss: 1) the guiding principles of The New Utrecht School, 2) a recent example of an interdisciplinary collaborative activity within The New Utrecht School, and 3) a concise description of the contributions to this publication.

To illustrate the first point – namely the origins of The New Utrecht School – we turn to a quote from Johanna Hudig, a leading figure in the Utrecht School and the Netherlands' first female judge:

1 In this introduction, when we use the term "interdisciplinary," we base our definition on Utrecht University's Strategic Plan 2025 reading guide. We would like to point out that, in some cases, the terms "multidisciplinary" or "transdisciplinary" might be more appropriate for describing a particular collaboration.

"The juvenile court judge strives to only impose a punishment if it is expected to have an educational effect. It would be better to speak exclusively of measures, of which punishment may be a part. Given our current understanding of psychology, psychiatry and sociology, it is clear that simply imposing punishment in the sense of causing additional suffering will not remedy the harm or help the perpetrator. In many cases, punishment is in fact counterproductive. We must consider each case individually and decide on the most appropriate measure. It then becomes apparent that the rule of law can also be upheld by means other than punishment." [7]

This short quotation articulates three guiding principles of both the historical Utrecht School and The New Utrecht School, ideas that will reoccur throughout the various contributions in this volume: 1) approaching a topic via a unique individual or phenomenon as understood in the context of the surrounding world, 2) adopting an interdisciplinary stance to understand, explain and intervene, and 3) by means of this interaction attempting to address broader, complex challenges. The New Utrecht School does not take a one-sided position in debates about, for example, phenomenology versus positivism, understanding versus explaining, or the natural sciences versus the humanities. Following in the footsteps of another renowned member of the Utrecht School, Henricus Cornelius Rümke, it instead strives emphatically for a "good integration" of the various scientific, scholarly and practice-oriented methods and approaches. [8 p.1]

Regarding the second point of this introduction – the interdisciplinary collaborations developed within The New Utrecht School – we will briefly reflect on our contribution to the 385th anniversary celebrations of science in Utrecht, "Creating Tomorrow Together." [9] The New Utrecht School organized a series of public dialogues, titled "Creating a Healthy Tomorrow Together." Participants from all university faculties attended; we invited speakers from the HKU, artists, healthcare professionals from the UMC Utrecht, and various societal partners. [10] In addition, students involved in The New Utrecht School through the initiative "Van Hier Naar [...]" (From Here To [...]) [11], together with the Utrecht Summer School [12] and the Journal of Trial and Error [13], organized an international summer school called "Turning Illness into Art: How Absence Empowers Creativity." The New Utrecht School also took part in the anniversary edition of the Betweter Festival organized by Studium Generale [14] with a project on mental health. At the time of publication, we are busy preparing for Utrecht's 390th anniversary celebrations, which will start in March, 2026. We have an exciting lineup of public dialogues, workshops and transdisciplinary events planned.

To return to the 385th anniversary celebrations, we believe our contribution to the Betweter Festival remains a good illustration of the type of work we do at the intersection of the arts, education, research, and community engaged learning in the health domain. Box 1 describes what we did in more detail.

***Box 1**: Exploring mental health care and diagnostic labels with the public through scientific and artistic collaboration.*

An issue currently receiving increasing attention – although it has been going on for years – is the global decline in mental health. This is strongly associated with an increase in psychiatric diagnoses, not only among children and young people [15], but also among (young) adults in all walks of life. [16] Considering this issue, we can pose the following question: what insights can be gained by examining psychiatric diagnoses as they relate to the worldwide decline in mental health? Diagnostic guidelines and protocols are meant to systematically describe symptoms and complaints, calculate group sizes, search for etiological explanations, and prescribe possible, evidence-based treatments. We must ask ourselves, however, whether a diagnostic label can really help us understand what it is like for patients who live with these issues. Does a label provide insight into the societal factors that seem to be causing more people to develop mental health issues during their lifetime?

The UMC Utrecht Verhalenbank Psychiatrie (Psychiatry Story Bank) gives patients the opportunity to share their stories about living with mental vulnerability [17] (see the contribution by Franssen, Van Sambeek, and Scheepers later in this collection). These personal stories from former patients, their loved ones, and their care providers are also scientifically researched and used for educational purposes. The goal is to identify new approaches that promote a better understanding of patients' experiences, recovery journeys, and person-centered care needs, as well as a more nuanced social and cultural perspective on mental health issues.

Image: Listeners during the Betweter Festival

Stories aren't always best expressed or understood through language and text. For some people, narrative expression through dance, film, theater, or visual art is much more suitable and accessible. Such modalities may even lead to a new social understanding of psychiatric issues. This is precisely why students from the HKU Conservatory conveyed stories from the Verhalenbank Psychiatrie (Psychiatry Story Bank) through music. [18] The resulting pieces of music were shared with the audience at the UU Betweter Festival, accompanied by the questions: what do you hear? What is this song about? Can you express this in words or image? Today, they can still be enjoyed on our website: https://www.uu.nl/en/research/the-new-utrecht-school/art-initiatives

Despite it being a pilot initiative, this approach seemed to easily encourage a different way of thinking about and perceiving mental vulnerability. Instead of focusing on psychiatric diagnoses and symptoms, the audience quickly sought to understand the lives of individuals with mental health issues and the impact on their personal and social worlds. In this interdisciplinary project by The New Utrecht School, UU, HKU, and UMC Utrecht collaborated using community-engaged learning [19] to innovatively address a complex social challenge. We hope this initiative sparked a shift in public opinion about mental health, moving beyond the labels of psychiatric diagnosis.

As the example above demonstrates, a wide variety of ideas, individuals, and approaches come together during events and initiatives organized by The New Utrecht School. This publication follows the same principle: our aim is to present a diverse range of perspectives, opinions, and visions on The New Utrecht School. For this reason, we invited contributors from all seven UU faculties, the HKU, the University College Utrecht (UCU) and the UMC Utrecht.

We see obvious links between the contributions in this volume. Many authors discuss the historical Utrecht School as a starting point or source of inspiration. Our contributors also reflect on individual responsibilities in relation to society. Furthermore, multiple authors weigh in on the role of critical thinkers in open science. Finally, several contributions offer perspectives on creative problem-solving techniques for complex challenges. Although all the contributions in this collection address these main themes to some degree, we have grouped them into one of these four broad categories. We realize these contributions could have easily been classified differently. We therefore ask our readers to keep an eye on the extent to which the chapters also relate to the other sections.

This volume is primarily a translation of our original 2022 publication; in the past years some of our contributors have retired or changed position. We've updated some of the chapters and vignettes accordingly so our new faculty deans and collaborating partners have a chance to share their vision as it relates to The New Utrecht School. In the final appendix of this volume, the original chapters and vignettes can still be read and enjoyed.[2]

PART I: The historical Utrecht School as a starting point and source of inspiration

The first four chapters in this volume focus on the historical legacy of the Utrecht School and the extent to which the ideas of this group of academics – including educators, lawyers, physicians, biologists, criminologists, and psychologists – are still relevant today. In Chapter 1, Stefan van Geelen provides a contemporary theoretical framework for understanding the goals and methods of The New Utrecht School. Those wishing to compare this framework with the original Utrecht School's ideas should consult Marieke Drost's historical review in Chapter 2. In Chapter 3, emeritus professor Frank Huisman subsequently examines broader developments and movements in science over the last half century. More specifically, he looks at the interaction between holistic and systematic ways of thinking. Chapter 4 contains interview fragments with former healthcare professionals from the Wilhelmina Children's Hospital (WKZ) at the UMC Utrecht. These professionals were trained by or were in contact with members of the historical Utrecht School. By passing on their ideas to a new generation, they form a direct historical link between the historical Utrecht School and The New Utrecht School. In his contribution to this volume, Bald de Vries connects the theories and practices of both the historical Utrecht School and The New Utrecht School to his own teaching and scholarship. Combining personal history, philosophical contemplations, and practical anecdotes of how he approaches the teaching of law in contemporary society, de Vries shows us in Chapter 5 how theory and practice can be woven together to shape a holistic vision for education.

PART II: Responsibilities to the self and society

In Chapter 6, "Putting People First (Again)," Berent Prakken and Roos de Jonge reflect on the scientific and healthcare developments explained by Huisman from a historical point of view. They argue that patient involvement is an essential step toward more holistic care and more relevant – and therefore less wasteful – research. Chapter 7 on the Verhalenbank Psychiatrie (Psychiatry Story Bank) by Gaston Franssen, Nienke van Sambeek, and Floortje Scheepers provides a practical example of how individual narratives are carefully collected and analyzed. Louis Bont powerfully illustrates in his chapter (8) the power and impact of his own narrative, and reflects on how his family's illness experiences have shaped his perspectives on healthcare. In Chapter 9, Marieke Schuurmans, Tatjana Seute, and Roger Damoiseaux argue that students pursuing careers in healthcare should collaborate more with students from other healthcare professions during their studies. This approach, they contend, will teach students the necessary skills to have an impact in the increasingly complex Dutch healthcare landscape. In Chapter 10, Isabel Arends explores the various ways in which the Faculty of Science is seeking to foster greater interdisciplinary collaboration to better study complex developments, such as those in artificial intelligence. Gisela van der Velden and Gönül Dilaver advocate for greater respect for and attention to diverse perspectives in university programs in Chapter 11. Using various examples, they explain why they believe this is desperately needed. Manon Kluijtmans describes in Chapter 12 how the residential University College Utrecht community strives to create a 'living laboratory' where diversity thrives and students feel connected to their campus community and the broader public. In Chapter 13, Mirko Noordegraaf, Rebecca van Musscher, and Janneke Plantega also argue for a more "open" and socially oriented university. Finally, in Chapter 14 Silvester Beelen and Sebastian Bok reflect on the joys of learning and describe the qualities they hope students and teachers from Utrecht will radiate to the broader society. These include resilience and a strong desire to make a difference.

All the authors in Part II share a deep intention to reform the university so that it better reflects society's demographics and needs. This requires both creativity and a curiosity for intellectual diversity and diverse forms of collaboration. Like the original members of the Utrecht School, the authors in this section honor and champion individual perspectives and experiences.

2 As the reader may have noticed, some chapters are marked as vignettes. These are shorter pieces with a more descriptive or narrative style.

Part III: Critical thinkers for open science

The changes envisioned in Part II are accompanied by a shift in the way education and research are conducted and valued. Part III of this collection features reflections by various authors on the practical implications of an open science agenda for research, healthcare, and education. The original members of the Utrecht School sought to test the valence of their theoretical contributions in practice. The contributions in this section aim to do the same.

According to the authors of Chapter 15, Stefan Gaillard, Alex Visser, and Maura Burke, who are affiliated with the *Journal of Trial and Error*, failure and uncertainty are essential yet underrepresented elements of scientific research. *JOTE* is a diamond open access journal that aims to provide a safe forum where scientists can share their mistakes, null- or negative-results, and doubts or struggles, with the goal of learning from one another. Together with The New Utrecht School, they just brought out a special issue on failure and uncertainty in the health domain and are working on a special issue on understanding what Open Education might mean. Leoniek Wijngaards provides some inspiring examples of how Open Education is practiced in Chapter 16. For example, she describes how the university-wide platform Dynamics of Youth fosters and supports flexible networks to tackle complex problems across disciplines. In her contribution (17), Marieke van der Schaaf discusses how uncertainty plays a role in the daily lives of researchers, teachers, and other professionals. She advocates for an educational program that not only teaches professional skills but also trains students to work adaptively and find meaning. This requires more interdisciplinary collaboration, attention to reflection, and interactive, boundary-crossing education. In Chapter 18, Debbie Jaarsma discusses how the Faculty of Veterinary Medicine is involved in interdisciplinary initiatives that promote sustainability, similar to the goals outlined by Marieke van der Schaaf. The innovative, transdisciplinary educational and research initiatives described by Niels Bovenschen and Sanne ter Meulen – De Jong in Chapter 19 are prime examples of the need for adaptability and structural promotion of interdisciplinary and personalized education. In Chapter 20, Annemarie van Wezel discusses the collaborative attitudes and infrastructures necessary to gain critical knowledge that can contribute to a resilient and sustainable future. In the final chapter in this section (21), Monique van der Linden and Marc Bonten reflect on what educational innovation in their faculty looks like in practice.

Part IV: Creative problem solvers for complex challenges

For the original members of the Utrecht School, the arts played an essential role in both their theoretical contributions and their practical work. Their rationale is aptly illustrated in the following quotation:

"In human reality there are certain phenomena which reach so deeply into a man's life and the world in which he lives that poetic language is the only adequate way through which to point to and so to make present a meaning which we are unable to express clearly in any other way." [20 p. ix] More than thirty years later, our collection aims to introduce The New Utrecht School to a wider and hopefully curious readership. The arts play an integral role in various visions and initiatives that have already been described in this collection. Creativity – in thought processes, lines of research, art projects, and educational initiatives – is a recurring theme in many of the contributions in this volume. The final chapters focus primarily on creative and artistic methods.

In Chapter 22, "The Art of Care and Well-Being... and of Uncertainty," Nirav Christophe, Heleen Jumelet, and Jos Schillings describe various examples of transdisciplinary "co-creations" with health professionals, scientists, patients, and artists. These authors rightly emphasize that stories and storytelling are essential and powerful connectors. Elaine Mak also reflects on the importance of storytelling for researchers and students in her chapter (23), especially when trying to explore new and impactful ways of knowing and showing theoretical insights to a broader public. In Chapter 24, Ronald Poppe describes how a creative, cutting-edge technological and interdisciplinary collaboration led to a better understanding of a practical intervention to improve the quality of life for children with chronic conditions. The authors of Chapter 25 – Tessa van Charldorp. Megan Milota, Veerle Siebinga, Kiene Brillenburg Wurth, Ted Sanders, and Stefan van Geelen – explain how the new Medical Humanities minor and master's program tackle complex issues in an innovative way. In Chapter 26, Marco van Brussel, Renske van Gestel, and Wim Kremer share how the new bachelor's program in Care, Health, and Society aims to provide future (veterinary) medicine and pharmacy professionals with a broad, interdisciplinary education to prepare them for their rapidly changing fields. Harold van Rijen, Annet van Royen-Kerkhof, and Bert Arets also aim to achieve this approach in their work within the strategic alliance between Utrecht University, UMC Utrecht, Eindhoven University of Technology, and Wageningen University & Research (Chapter 27). Finally, in Chapter 28, Thomas Vaessens emphasizes the importance of a broad perspective and social engagement at the faculty of Humanities.

As we mentioned already, some of the contributions from our original Dutch-language edition have been moved to the Appendix. Here you can find inspiring reflections by Marcel van Aken, Wilco Hazeleger, Henk Kummeling, Margriet Schneider, and Arno Hoes.

While rereading and translating the individual contributions in preparation for this publication, we, as editors, were pleasantly surprised by the distinctive shared vision on intellectual diversity and collaboration that has apparently existed in Utrecht for so long and is now being revived by The New Utrecht School. We hope this collection shines a light on this existing tradition, once again leading to valuable, unusual, and inspiring new dialogues and initiatives across different domains.

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PART I

The historical Utrecht School as a starting point and source of inspiration

01

The New Utrecht School: Connection through openness

Stefan van Geelen

Summary

In this chapter, drawing on the historical context of the Utrecht School, the question is posed as to whether The New Utrecht School should aim to teach more than science, strictly understood as the transfer of knowledge and skills. The chapter also examines the innovative character of The New Utrecht School. It is argued that, to ensure future-proof academia, greater emphasis must be placed on learning, cultivating an open mind, and fostering an open attitude capable of connecting different worlds. Only then can we engage in meaningful dialogue about our shared understanding of the complex interplay between humans, animals, nature, the Earth, institutions, society, and culture.

The New Utrecht School: Connection through openness

> "Is there a fundamental connection that links all faculties?" Even though we are aware of that connection and recognize that it is essential for the core values of the university to be upheld, it is equally clear to anyone who observes honestly that we are little, too little, aware of that connection." [1]

In the turbulent war year of 1942, Henricus Cornelius Rümke – one of the founders of the historical Utrecht School – delivered a speech titled *"Wat alle faculteiten bindt"* (What unites all faculties) while serving as acting rector magnificus of Utrecht University.[1] In his speech, he argues in retrospect that the increasing absence of a binding perspective rooted in ideology, philosophy, and an overarching vision of science has paved the way for misguided forms of specialization. This puts universities at risk of becoming a fragmented patchwork of vocational schools. He also warns that there is a danger of overlooking the fact that students need to be equipped not only with knowledge but also with the skills necessary to participate fully in (academic) life.

As outlined in the introduction, The New Utrecht School was founded as an interinstitutional platform for Utrecht University (UU), the HKU University of Arts Utrecht, and the University Medical Center Utrecht (UMCU) to collaborate across disciplines. Since we are still in the early stages of this movement, we can – following Rümke – reflect on the historical tradition from which we draw inspiration and consider how we wish to shape The New Utrecht School together. The publication of this collection, featuring contributions from the UMC Utrecht, HKU, and all Utrecht University faculties, provides an excellent opportunity to examine whether we too would like to convey more than just science in our education today, and to raise the question what can unite us in The New Utrecht School. This chapter will attempt to provide an initial, contemporary answer to

Image: Buytendijk and Merleau-Ponty.

1 Rümke was a special professor of developmental psychology and a professor of psychiatry at Utrecht University. He was also the curator of the university's psychiatric and neurological clinic. In 1953, he became rector magnificus of Utrecht University.

this two-part question, based on the historical context of the Utrecht School. The innovative dimension of The New Utrecht School in relation to the historical Utrecht School will also be briefly discussed.

Education beyond the transfer of scientific knowledge and skills

As Henk Kummeling wrote in the foreword of the previous Dutch edition (see appendix), the members of the Utrecht School found common ground in phenomenology. They were inspired by, and maintained close contact with, important figures in the movement, including Ludwig Binswanger, Maurice Merleau-Ponty, and Martin Heidegger. But what exactly was this phenomenology that was central to the Utrecht School, and on which it seems to have been built? To what extent does The New Utrecht School reflect this philosophical tradition, and to what extent is the school dependent on it? This chapter does not provide sufficient space for a comprehensive answer to these questions. Therefore, as a preliminary explanation of what the phenomenology entails, we will first turn to a quote from *Persoon en Wereld* (Self and World), (one of the best-known joint works by members of the Utrecht School). In the chapter called *"Het gesprek" (The Conversation)*, we find the following anecdote about the 19th-century poet Tennyson and the historian Carlyle:

> "It is often told that Tennyson visited Carlyle, and that the two of them sat by the fire for hours, not speaking a single word. As his guest was about to leave, Carlyle bid him farewell and spoke the following words: 'We had a grand evening, please do come back very soon.'" [2 p. 137]

The author of this chapter, Jan Hendrik van den Berg,[2] concludes from this anecdote that successful dialogue apparently lies not in words or language, but in being in each other's presence. In "conversation," it is silence that enables genuine connection. In the most fundamental sense, it serves as the basis of dialogue. In true silence, not only does the conversation with others and with things cease, but even the near-constant conversation with oneself comes to a halt – and it is for this reason that one becomes able to truly listen and hear. From this silence, a space opens wherein phenomena – from the ancient Greek phainomena, meaning "that which appears" – can reveal themselves and be perceived as interconnected (i.e. as a world), independently of concepts, theories, or frameworks of thought and perception. Logos – the other component of phenomenology – refers to the attempt to understand what is revealed in openness as accurately and impartially as possible.[3] [3] As such, phenomenology is much more a methodological starting point than a theory. The question that naturally arises here is: Is this possible? Can we perceive reality independently of any perspective? For The New Utrecht School, the answer to this question is less important than the associated attitude: an openness to the world that is not predetermined by specific goals. [4] For The New Utrecht School, it is about daring to take a moment and approach life with an open mind and attitude. This allows for the discovery of new applications, the practice of open science, and the connection of worlds. It does raise the question, however: Where in today's education system do we learn this?

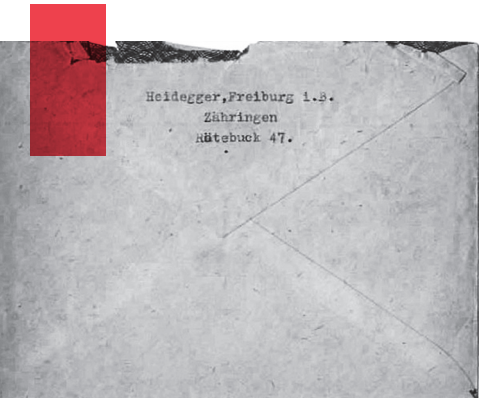
According to Gert Biesta's widely shared view of education and training, three main functions or goals can be distinguished: the qualifying function, the socializing function, and the subjectifying function. [5] The qualifying function involves acquiring knowledge, skills, and understanding. The socializing function entails becoming a member of a professional group. The subjectifying function refers to the process through which the learner becomes an independent, thoughtful, and responsible person or professional. [6] It is often assumed that our focus has primarily been on transferring scientific knowledge and skills, as well as orienting ourselves towards existing traditions and practices in the field. At the same time, a strong argument can be made that education and training should pay much more attention to subjectification, or personal development. For Biesta, the focus is not on uniform personal development driven by a predetermined ideology or professional norms. Instead, it is about empowering learners to grow freely towards becoming fully realized individuals. [5] The New Utrecht School fully supports this vision, agreeing with Rümke and Biesta that education should impart more than just scientific knowledge. At the same time, however, one aspect of the qualification function seems to be collectively overlooked or forgotten: helping learners gain insight and understanding (verstehen). Even Biesta states in his 2018 inaugural lecture: "It is customary to view the qualification, provision, and acquisition of knowledge and skills as the 'core business' of education," which completely disregards the aforementioned aspect of "understanding." [5] Yet, a true foundation for free formation only seems possible if we start to focus more on this part of the qualifying function. This will allow us to work on greater flexibility and variety in the socialization function.

Fortunately, the connecting of worlds, finding new applications, and practicing open science are among the skills that are currently receiving growing attention. But why do

2 Van den Berg was a chef de clinique at the University Psychiatric Clinic in Utrecht and a professor of pastoral psychology. He was also a professor of phenomenological method and conflict psychology at Leiden University and a prominent member of the Utrecht School.

3 Logos is also found in the word "dialogue" and is generally translated as "word," "thought," "language," "reason," "law," "principle," or "teaching." As a noun, it is related to the verb "legein," usually translated as "to read" or "to speak." However, as an ancient Greek root word, "legein" comes from "to gather." In this context, consider also the original meaning of the Dutch word "lezen" (to read). The Van Dale – Groot Woordenboek der Nederlandse Taal (Van Dale Comprehensive Dictionary of the Dutch Language) defines "read" as follows: "the original meaning is 'to gather.'"

we pay so little structural attention in our education to taking a moment and being silent? Why do we not teach an open mind and attitude? Why do we not emphasize the moment of questioning before searching for answers and solutions? Why do we not focus on experiential understanding and insight? On the one hand, perhaps because we no longer have the scientific methods for it and therefore need to collaborate with non-academic partners in new forms of reciprocal community-*engaged learning*. Through the arts, we could consistently explore what we can learn from, for example, dance about maintaining an open attitude, what we can learn from music, about the importance of silence and active listening. Visual arts could teach us to keep a open mind, while theater could enlighten us about the interconnectedness of different elements within a "world." Literature, in turn, could teach us to creatively transform these experiences into meaningful stories. On the other hand, however, it may be that with the decline of phenomenology – which Marieke Drost and Frank Huisman discuss in more detail in the following contributions – and the subsequent shift to "evidence-based science," academia has come to regard this form of "thinking" as too *simple and straightforward*, and therefore ignores it systematically. In the words of Heidegger, an important source of inspiration for the historical Utrecht School: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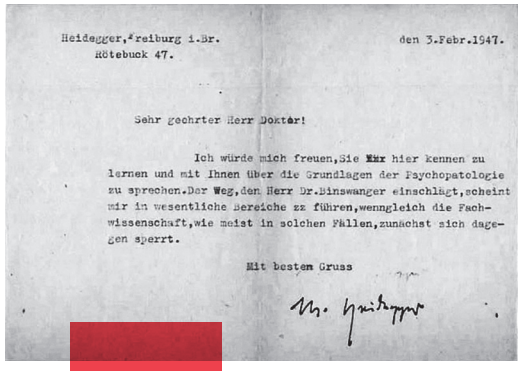
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den 3.Febr.1947.

Sehr geehrter Herr Doktor!

Ich würde mich freuen,Sie Ihr hier kennen zu lernen und mit Ihnen über die Grundlagen der Psychopatologie zu sprechen.Der Weg,den Herr Dr.Binswanger einschlägt,scheint mir in wesentliche Bereiche zz führen,wenngleich die Fachwissenschaft,wie meist in solchen Fällen,zunächst sich dagegen sperrt.

Mit bestem Gruss

Images: Letter from Heidegger to Van den Berg.

> "Weil im diesem Denken etwas Einfaches zu denken ist, deshalb fällt es dem als Philosophie überlieferten Vorstellen so schwer. Allein das Schwierige besteht nicht darin, einem besonderen Tiefsinn nachzuhängen und verwickelte Begriffe zu bilden, sondern es verbirgt sich in dem Schritt-zurück, der das Denken in ein erfahrendes Fragen eingehen und das gewohnte Meinen der Philosophie fallen läßt." [7]

What can unite us in The New Utrecht School?

When we acknowledge that in our education we may indeed wish to convey more than science narrowly understood as knowledge and skills, we can then turn to the question of what can unite us within The New Utrecht School. In addressing this question, the strategic plans of the UU, the HKU, and UMC Utrecht, called *"Open Mind, Open Attitude, Open Science," "New Connections, New Applications,"* and *"Connecting Worlds, Because Every Person Matters"* (which was already implicitly referred to in the previous section) formed a logical starting point. These titles alone make it clear that Rümke's longing for connection remains highly relevant today. The principles of the historical Utrecht School – as outlined in the introduction[4] – have apparently long shaped a shared Utrecht approach. The following quote from Van den Berg, again from *Persoon en Wereld* (Self and World), can serve to further explain one part of that approach, namely a shared view of humanity.

> "A person was conceived as a thing. […] But a person is not a thing; they are a dialogue. [...] A person is a dialogue; they are an ongoing 'self-evident' form of communication with themselves, with others and with things. The latter also appeal to them in a very specific, yet equally immediate way." [8 pp. 3-4]

Van den Berg elaborates on this line of thinking, drawing on insights from, among others, the philosopher and psychologist William James, who, as a representative of pragmatism – a philosophical tradition to which Peirce and Dewey also belong – wanted to connect theory with practice for the benefit of society. In *The Principles of Psychology* (1890) James distinguishes between the different and inseparable dimensions of the human self: an experienced self ("*I*") and the aspects of the self used to define "I" ("*me*" and *"mine"*). With this in mind, when formulating an answer to the question *"Who am I?"* – consider not only

4 These were 1) having structural attention to the unique individual or phenomenon to be studied and understood in the context of the surrounding world, 2) adopting an interdisciplinary approach to understanding, explaining and intervening, and 3) contributing to the solution of major societal challenges.

a person's various social roles, personal relationships, and social and cultural background, but also the material aspects people use to define themselves: their bodies, clothing, cars, and cities – i.e., the "things" referred to in the above quotation. According to Van den Berg, personal development arises from the dialogue between the various aspects of the self: the dialogue with ourselves, the dialogue with others, and our dialogue with the "things" that are part of our world. A person is not a fixed, definable object, but rather an ongoing dialogue that adapts constantly to ever-changing circumstances. A consequence of this view is that we accept that every person is distinct from others. If we want to provide an open learning environment for people, help them study or support them, we must always start with an understanding of their personal and social "world:" each person is unique and every human being counts.

The New Utrecht School can also apply such a dialogical framework more broadly as a framework for a coherent vision of the innovation that takes place in the Utrecht approach through interdisciplinary education, art, public, and research activities[5]:

- **Interdisciplinary education:** These rapidly multiplying educational innovation initiatives (in Utrecht itself, nationally in collaboration with the strategic alliance [9], and internationally with, for example, the *Eureka Institute* [10] and CHARM-EU [11]) challenge students, trainees and teachers, often from a monodisciplinary background, to adopt different disciplinary perspectives and allow them to clash. Learners are encouraged to discover new aspects of themselves by engaging with diverse student groups and experiencing new learning and working environments. Through internal and external dialogue, they must strive to develop an integrated and multifaceted personal and professional identity, so that they can enter the field of science, art, or their profession with resilience and flexibility. [See for example 12-13]
- **Interdisciplinary art initiatives:** In art, but also in practice-oriented art research and art education, understanding dialogicity (also referred to as "polyphony") between the artist, the artwork, the audience and the social context is playing an increasingly important role. This is not only evident in the form of new pedagogical approaches for students and projects that actively engage the public, but also, and above all, in the way the analysis of dialogicity/polyphony is seen as fundamental to streamlining, accelerating and enriching the creative process itself. [See for example 14] The artistic research project *Performing Working*, for example, initiates a dialogue between healthcare staff and patients, thereby revealing the hidden performativity and often invisible work that both groups have to perform. [15]
- **Interdisciplinary public activities:** One of the pillars of The New Utrecht School is organizing an annual series of public dialogues. During these events, scientists, healthcare professionals, artists, patients and other stakeholders engage in discussion with each other and with the public. To date, several series have taken place, including: *Art, Humanities and Medical Sciences, Future visions of healthcare, Global health*, and *Creating a healthy tomorrow together*. The dialogues aim to *1)* encourage *community-engaged learning,* and involve an increasingly broader audience, *2)* besides reflection, also offer space for creativity, and *3)* translate public insights into new scientific and artistic questions.
- **Interdisciplinary research:** In a broad sense, open science is about creating connections: integrating education and research, bridging science and society, fostering collaboration between staff and learners within an open academic culture, and linking individual careers to innovative forms of team science. The New Utrecht School is convinced that this connection, can only be established through open dialogue, or, as Frederik Jacobus Johannes Buytendijk – one of the other founders of the Utrecht School – already wrote:[6]

"Dans le dialogue nous fondons
un monde commun." [16]

5 Although educational research currently forms a central part of The New Utrecht School, research is also included here in a broader sense, and from a presumed inextricable connection with the other domains.

6 Buytendijk was a physician and a biology lecturer at VU University Amsterdam. He was also a professor of physiology in Groningen and a professor of psychology in Utrecht.

In his own medical field, psychiatry, Rümke also pursued explicit dialogue between the natural sciences and the humanities. In his aforementioned lecture, "Wat alle faculteiten bindt" (what unites all faculties), he makes the following observation: "If every person of knowledge reflected on the limits of their knowledge, the need to understand others and to be enriched by them would undoubtedly increase. This would mean that entire groups of scientists would no longer be strangers who do not even understand each other's language."

The innovative dimension of The New Utrecht School

The reflections in the previous section lead us to consider the extent to which The New Utrecht School differs from the historical Utrecht School, beyond the shared principles outlined above. These differences can be observed in three main areas:

1. **The scope of the collaboration:** As will be explained in more detail later in this section, the historical Utrecht School was primarily a university collaboration between academics from the fields of medical sciences, law and social sciences. However, The New Utrecht School also explicitly focuses on (educational) collaboration with art academies, artists, colleges, and partners in the natural sciences, the humanities, veterinary medicine, and geosciences, as well as non-academic partners such as the Municipality of Utrecht.[7]

2. **The method:** As we observed, the historical Utrecht School was primarily a phenomenological movement. The distinction made by 19th century German philosopher and historian Wilhelm Dilthey between causal explanation (*erklären*) in the natural sciences and empathic or intuitive understanding (*verstehen*) in the social sciences and humanities was important in this regard. The historical Utrecht School focused mainly on the latter. For The New Utrecht School, however, this is by no means sufficient. We must certainly start from an unbiased understanding of the phenomena to be studied and develop innovative systems for art, education and research for this purpose. The next step, however, is to explain what has been understood in this way, drawing on the latest *evidence-based* insights and methods.

3. **The initial focus on health as an overarching theme:** As will become clear in the next chapter, the historical Utrecht School did not have a clearly defined program or shared focus area. The New Utrecht School, on the other hand, initially had a collective focus on training (future) professionals in the broad field of health. As every person is unique, it is of the utmost importance to carefully consider how we ensure inclusion and diversity. As Gisela van der Velden and Gönül Dilaver argue in their contribution, this applies not only to our approach to humans and test subjects, but also to the design of animal models and the study of basic cellular processes. Furthermore, we must consider the complexity of, and interaction within large systems, such as the relationship between climate, health and sustainability[8] [17], as well as the translation of insights and knowledge from fundamental science to practice.

In addition to exploring innovative methods for understanding complex phenomena in an interconnected manner – with an open mind and before seeking causal explanations and solutions – we must also engage in deeper dialogue about what we meant by health as an initial overarching theme. As recent *public health* reports show, there is a serious and growing problem of mental health issues among students within our institutions. [18] This problem also appears to be urgent among employees and is only getting worse, with all the associated socio-economic costs. [19] But what is the underlying social issue here? Naturally, the rising prevalence and incidence are significant concerns. However, this alone does not constitute an effective analysis of the problem for our society. Does the observation that more and more people in our society are experiencing declining health tell us something about what is really going on in our society that is causing so many people to develop health problems? While tackling "the issue" with all kinds of programs and interventions may seem like an effective approach, perhaps we should first take a step back and reconsider our shared notion of health in the context of the complex relationships between humans, animals, nature, the Earth, institutions, society and culture.

Many people will be familiar with the concept of "positive health." This notion departs from the World Health Organization's earlier, largely negative definition of health as "the absence of disease," instead formulating health as *"the ability to adapt and self manage in the face of social, physical, and emotional challenges."* [20] Although this is a major step forward, the definition places considerable emphasis on individual organisms' physiological coping strategies, increasing subjective well-being, and the ability of individuals to take control of their lives. As such, it is still a relatively individualistic and primarily human-centered notion. Yet, shaping the future of academia in a critical, creative, open, and responsible way demands a far broader perspective on health. In this regard, it is of the utmost importance to maintain a continuous dialogue between social partners and various legal, veterinary, economic, artistic, organizational, humanities, geographical, administrative, natural and social science disciplines. This publication convincingly demonstrates that, within The New Utrecht School – based on our own historical Utrecht tradition and approach – we are now willing and able to engage in this dialogue in an open and connected manner.[9]

7 See, for example, the public dialogue on the future of the healthy city with Lot van Hooijdonk, deputy mayor: www.uu.nl/en/research/the-new-utrecht-school/portfolio/future-of-the-healthy-city. Many of the collaborations mentioned here are, of course, already taking place within other contexts and compositions, for example within the strategic themes and focus areas, the Health Hub Utrecht, the graduate schools and the strategic programs. It is our express wish to achieve more cross-pollination in the (near) future and to involve new partners in The New Utrecht School on a structural basis.

8 Take, for instance, the recent cautionary statement issued by the editors of over 200 health journals concerning the pressing risks of climate change to our well-being.

9 I would like to thank the following individuals for their critical and constructive comments on earlier versions of this chapter: Wietse Kuis, Megan Milota, Stefan Gaillard, Gaston Franssen, Marieke Winkler and Berent Prakken.

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"Free – so shall be our art's banner,
and our science – shall be joyous!" [21]

02

The New Utrecht School: Historical outline

Marieke Drost

Summary

Shortly after the Second World War, a group of scientists and intellectuals emerged in Utrecht who later became known as the Utrecht School. The movement promoted a person-centered, phenomenological approach to the human sciences, opposing reductionist scientific views. According to the Utrecht scholars, the "human sciences" encompass a wide range of disciplines, including biology, physiology, pedagogy and criminology. They did not draw any sharp boundaries between these disciplines. The movement gained considerable influence in the Netherlands after the war, and its members became internationally renowned. However, from the 1960s onwards, the influence of the Utrecht School rapidly declined. What follows is an outline of the ideas and methods, as well as the rise and fall, of the movement.

The New Utrecht School: Historical outline

In the 19th and first half of the 20th century, major advances were made in the life sciences. Human and animal bodies were mapped in ever greater detail. Nerve cells, synapses, hormones and neurotransmitters were discovered to be part of a complex interplay of processes that could be investigated experimentally and described in chemical and physical terms.

Alongside these successes, however, a sense of unease emerged as a natural scientific view of human nature gained ground. Surely, humans were more than just their bodies, more than what could be observed and measured in a laboratory? Critics feared that science, despite its detailed knowledge, might lose sight of humanity itself, and that other sources of understanding – such as intuition and direct human experience – would be disregarded.

Around some of these critics, an academic movement emerged in Utrecht after the war, aiming to place the human being at the center of the human sciences. They believed that the term "human sciences" encompassed all disciplines concerned with human beings, including the natural sciences, the humanities and what we now refer to as the social sciences. This movement opposed any scientific view that reduced the complexity of human beings to physical processes, abstract categories, and causal processes. Just as the quantity or composition of paint on a canvas cannot describe a painting, a person is also more than the sum of their parts. [1-2]

This “Utrecht School” – a name later coined by others – would leave its mark on the human sciences in Utrecht and far beyond in the two decades after World War II. The movement spanned a variety of disciplines, including medicine, education, biology, psychology and criminal law. These days, we would most likely describe it as interdisciplinary or multidisciplinary. For these doctors, lawyers, psychiatrists, physiologists, criminologists, psychologists, and educators, this “holistic thinking” (in Dutch: "overkoepelend denken") was self-evident and necessary in order to gain a proper understanding of human beings.

I will attempt to capture this colorful group within a single narrative, without undermining the diversity that lies behind the term "school." The story begins in the years leading up to the war, when scientists laid the groundwork for the post-war Utrecht movement by critically analyzing their own fields.

1. The prelude

The psychiatrist H.C. (Hen, pronounced "Han") Rümke was one of those critical scientists. In his inaugural lecture, delivered upon his appointment as professor of psychiatry in 1937, he acknowledged that “the natural science approach” had brought enormous progress to the field. At the same time, he expressed concern about the growing tendency to regard psychiatric disorders as purely neurological conditions and to reduce psychiatrists to brain anatomists. This "psychiatry without a soul" threatened to overshadow the more humanistic, psychological approaches, dismissing them as "unscientific" (“humanities” and “psychology” were not so far apart at that time).

Rümke wanted to combat that trend: "When people ask me what is most characteristic of psychiatry, in terms of both practical medicine and science, my answer is: The crux is that, psychiatry, due to the nature of its subject matter, cannot be considered as belonging exclusively to either the natural sciences or the humanities. Psychiatry had to come to terms with what he called its “dual structure.” Its subject was both body and mind, brain and psyche.

Rümke's concept of "humanistic psychiatry" did not reduce people to their nervous systems, nor patients to their disorders or brain damage. His aim was to study humans as *subjects* and gain an understanding of their subjective experiences. In fact, according to Rümke, psychiatry had no other choice: after all, disorders primarily manifest themselves in a person's concrete, individual and subjective experience. Even if your only interest was locating diseases in the body, you first had to ascertain the patient's subjective experience through psychological analysis in order to determine what needed to be located. In short, psychiatry could not ignore the human experience. And this was not only true for psychiatry: "One might say that psychiatry shares this with all sciences concerned with human beings. I readily admit that, in this respect, psychiatry does not differ in principle from medicine as a whole.” [3]

For the physician and physiologist F.J.J. (Frits) Buytendijk, the dominance of the "natural science approach" in the 1930s was much more than an academic issue. Before the war, years before he became a prominent representative of the Utrecht School, Buytendijk was already a well-known scientist. He had a voice in the public debate, which he used to warn against the rise of “racial thinking.” He blamed medicine for paving the way for such pseudoscience by treating humans as “natural objects.” [1 p. 187,4] In 1936, he wrote that doctors had no response to this "anti-humanist" and "anti-Christian" ideology because they were no longer focused on human beings: "Medical science has developed in complete isolation from the humanities. This is evident […] from the utter helplessness with which its practitioners, with a few exceptions, face the problems of humanity and society."

According to Buytendijk, medical science had become fragmented due to far-reaching specialization along artificial, theoretical boundaries. It produced “a widely ramified scientific knowledge of bodily processes, held together in small fields by simple working hypotheses,” which had little to do with human beings. [5] Once these fragments of knowledge had been gathered together “and presented to the people as the scientific foundation of a human science, a racial ideology,” doctors could do nothing but watch from the sidelines of their specialized fields of study. [4 p. 50-5]

The traditional physician, on the other hand, stood at the bedside of the sick, got to know their families, and witnessed their births and deaths, wrote Buytendijk. This had instilled in them a certain respect for humanity and a sense of “the relativity of one's own knowledge and abilities.” Without that holistic perspective, medicine was in danger of losing its ability to help people properly. [5 p. 30]

Criminal law scholar Willem Pompe laid the foundations for the criminological branch of the Utrecht School, which would go on to make a significant contribution to the humanization of criminal law and criminology after the war. Pompe was appointed as a professor at Utrecht University in 1928. In his inaugural lecture, he challenged prevailing ideas about crime, arguing for a new, more humane approach to criminals.

According to Pompe, the perpetrator had long been a legal abstraction in criminal law: A more or less ordinary citizen who had made a wrong choice and who had to come to their senses alone in their cell. He contrasted this classical view with the “modern” school, which emphasized the deviant and pathological nature of criminals. This school built on the work of doctors, biologists, sociologists, and especially psychiatrists (who were, after all, experts in the field of deviant minds), and saw the perpetrator as fundamentally different from and often inferior to ordinary citizens. In this view, Pompe said, "what seemed most amenable to empirical research prevailed: that which could be perceived through the senses. This linked crime to physical characteristics, virtually eliminating the possibility of improvement." While the classical approach reduced the perpetrator to their actions, the modern approach reduced them to their biological predisposition or environment.

Pompe believed that criminal law could only be considered truly just if it recognized both the universal humanity of all people and the unique characteristics of each individual perpetrator. Effective punishment and assistance were only possible once the perpetrator had been identified as an *individual*. Pompe was optimistic because a more humane vision was emerging: “The perpetrator is gradually being regarded as someone who is incapable of leading an orderly life independently, and who needs help, supervision, education and care to do so.” Such assistance required psychiatrists, psychologists, educators, lawyers and social workers to collaborate on cases involving individual suspects. At the same time, as a *human* science, criminology had to dare to ask big questions about free will and morality: "The criminal is a human being, the equal of others. The problem of the perpetrator in criminal law is ultimately a problem for all of humanity."

2. The beginning: A school photograph

After the war, a movement emerged around Buytendijk, Rümke, Pompe, and like-minded individuals that, for fifteen years, promoted an alternative to the scientistic human sciences – i. e. human sciences that modeled themselves on experimental, objectivist natural science. This Utrecht School comprised two distinct but overlapping circles. The circle around Buytendijk focused primarily on what we would now call the social sciences, while a circle of criminologists, forensic psychiatrists, and lawyers formed around Pompe.

The movement gained considerable influence within Utrecht University in a short period of time. Had a "school photo" been taken in the years after the war, it would have featured around eight men who were either professors or on their way to becoming one. J.C. (Han) Hudig, the only female actor, was a criminologist and criminal law scholar. She became the first woman to be appointed as a judge in the Netherlands in 1947.

Such a photo would likely show Buytendijk standing in the middle. He was widely recognized as the driving force and key inspiration behind the Utrecht School, and his appointment as professor of psychology in 1946 is generally considered to have marked the beginning of the movement. While the appointment of a physiologist to a psychology chair raised a few eyebrows, it was not remarkable from his own scientific perspective. According to Buytendijk, an overly strict separation of the two fields would only hinder progress in both. [4 p. 86] Standing next to him would be Martien Langeveld, the pedagogue who wanted to create a "human sciences unit" in Utrecht and realize a *Bildungs* ideal. [4 p. 59, 6 p. 283] He became a professor of pedagogy in 1946. Before the war, he had studied Dutch Language and Literature. Pedagogy was not yet an independent field of study, but he later established it himself as a professor. During the war, he gained considerable influence within Utrecht University as a professor by special appointment. He later used his influence to unite the Utrecht scholars. Buytendijk, for example, owed his chair partly to him. [6 p. 275]

Image 1: Physician-physiologist F.J.J. (Frits) Buytendijk, driving force and key inspiration behind the Utrecht School.

The same was true of David van Lennep, who became a professor of psychodiagnostics and occupational psychology at Utrecht University in 1949. Langeveld managed to keep Van Lennep's rival, Adriaan de Groot, who advocated a more "hard-science" psychology, out of Utrecht (De Groot would remain Langeveld's nemesis until the end of his career). The aristocratic Van Lennep – a squire – had worked as a test psychologist before the war and had obtained his doctorate under Rümke. Rümke himself had a major influence within the movement, teaching many prominent Utrecht scholars, among them the psychiatrist Jan Hendrik van den Berg, who later gained wide recognition as a best-selling author. In 1951, Van den Berg was appointed professor of pastoral psychology and psychopathology at Utrecht University.

Image 2: Criminal law scholar Willem Pompe, part of the central trio of the Utrecht School of criminology and criminal law.

In the "school photo," Pompe, who served as rector magnificus in 1946–47, would have been positioned alongside criminologist Gerrit Kempe and forensic psychiatrist Pieter Baan. They were the three central figures of the Utrecht School in the fields of criminology and criminal law. Kempe became professor by special appointment of criminal sociology, criminal psychology, and criminal law in Utrecht in 1949. Baan became professor by special appointment of forensic psychiatry two years later. Beside them was Han Hudig, who, alongside Kempe, had been Pompe's first assistant at his Criminological Institute. She returned to the Netherlands from the University of Chicago in 1947 to become a juvenile court judge. She was appointed a professor by special appointment of children's rights and child protection in 1957.

We have to imagine these prominent figures surrounded by a smaller group of less visible scientific staff and assistants. At the time, they generally had little or nothing to say, yet their labor-intensive work was invaluable. [7 p. 86] They conducted research in Buytendijk's psychology laboratory on the Wittevrouwenstraat and at Van Lennep's Institute for Clinical and Industrial Psychology (ICIP) on the Trans. At the Langeveld Research Institute, located one floor above the ICIP, educational staff observed children at play and produced reports that included recommendations for their schooling. In addition, a small army of criminologists, probation officers, nurses, and therapists worked at Pompe's criminological institute and at Baan's psychiatric observation clinic, which would later be named after him.

The common denominator

It is highly unlikely that such a photo was ever taken, as these individuals never all gathered in the same room. The term "Utrecht School" suggests a greater degree of organizational and strategic unity than actually existed. Apart from Pompe, Baan and Kempe, the other people involved did not work closely together on joint projects. "School," however, is a convenient collective term, and that is how I will use it here: as an umbrella term for a fairly loose group of intellectuals. The Utrecht scholars were united not by an institution or a strategy, but by mutual inspiration and a shared vision of what a broad human science program should entail.

Their vision was inspired by phenomenology, a philosophical movement that emphasizes intuitive understanding. Rather than breaking reality down into pieces and searching for connections between them, they wanted to study the "phenomena" as they occurred in immediate, unbiased experience – that is, in their entirety. The Utrecht scholars saw humans as changeable beings that could not be captured by static descriptions; they had to be "met" as subjects time and again. A phenomenologically oriented science, one that approached humans with an open mind, was – according to the Utrecht scholars – "more objective than any 'objective psychology.'" [8 p. 9]

The Utrecht scholars were part of a European phenomenological opposition to scientistic trends in the human sciences – that is, the tendency to structure these disciplines following the model of reductionist, objectivist natural sciences. They maintained correspondence, and at times friendships, with phenomenologically oriented intellectuals and scientists both domestically and abroad, particularly in France and Germany. Among them were existentialists such as Jean-Paul Sartre and Simone de Beauvoir, as well as supporters of "anthropological" medicine, the study of "the whole person," which sought to understand cells, tissues, and reflexes within the context of the entire organism. Due to its diverse influences, the Utrecht movement was variously described as phenomenological, anthropological, and humanistic. [4 p. 71,9 pp. 113-115,10 p. 126]

3. The person in all their complexity: The Utrecht School's view of humanity

The Utrecht School's view of humanity can be summarized in one simple word: *person*. According to Utrecht scholars, that word encompassed the many dimensions of human existence that could not be viewed separately from one another. The body and the mind, and the person and their world, formed a unified whole. A frequently cited passage by Buytendijk captures the core ambition of the Utrecht School:

The Utrecht perspective on humanity was also normative, it emphasized the "higher" aspects of human beings – specifically, their capacity to be guided by norms and values. According to Langeveld, the purpose of education was to raise children to become independent, self-reliant individuals. He believed that self-reliance implied morality and moral awareness, whether or not it was inspired by religion. [6 p. 218] Although the Utrecht School was not formally aligned with any particular religious belief, religion played a significant role in the humanistic worldview embraced by many of its members. For Rümke, mental health was closely linked to "a guiding, supra-personal spiritual idealism." He saw unbelief as a neurotic phenomenon and a developmental disorder. It was the responsibility of scientists and social workers to encourage people to recognize higher values. What values or belief this turned out to be, were left for each individual to define on their own. Each person gave meaning to their world in their own unique way, while – at the same time – that world was shaping them. [6 p. 101, 313,13-14 p. 37]

> "We aim to understand people from the perspective of their 'world', i.e., the meaningful basic structure of situations, events and cultural values to which they relate and are aware of, and which influence their behavior, thoughts and feelings. This is the world in which people exist and encounter experiences throughout their personal history, actively shaping it through the meanings they ascribe to everything. The human being is not 'something' defined by certain traits, but an initiative of relationships with a world they choose and that, in turn, chooses them." [11-12]

According to Buytendijk, the fundamental distinction between humans and animals lay in this interaction with the world around them. Prior to the war, he pursued research in animal physiology and psychology, earning his doctorate in 1918 with laboratory studies on habit formation in animals. [15] The animal, he wrote in 1930, "lives in undivided unity with its environment. Humans, on the other hand, experience the duality of 'World' and 'I' as the basis for their freedom, their knowledge, and their actions." [16] Neither humans nor animals could be viewed separately from their environment. However, because humans were capable of reflecting on their own existence, they did not completely merge with their surroundings. [4 p. 48,17 pp. 158-159] This gave them the opportunity to take control of their own destiny.

Notably, Buytendijk did not consider animals to be merely biological reflex machines either: he regarded them as "foreshadows" of humans. Their behavior was not dictated by "causes" (stimuli), but guided by fundamental goals such as obtaining food, reproducing, and ensuring safety. [4 p. 36] In that purposefulness, Buytendijk recognized human freedom in its rudimentary form. His laboratory research showed that even tiny water fleas (Daphnia) are more than just a collection of physical and chemical reflexes. The semi-transparent creatures appeared capable of temporarily suppressing their natural instinct to swim toward the light in order to escape from a glass tube. [15 pp. 55-68,17 p. 62]

According to Buytendijk, doctors, medical researchers and physiologists should regard humans as individuals and study them as "animated bodies." [17 p. 209] Buytendijk's booklet from 1943 illustrates how this might work in practice. The booklet was about pain – an appropriate subject given the circumstances in which it was written. At the time, Buytendijk was one of hundreds of hostages interned in a major seminary in Haaren. [4 p. 54] They served as guarantors for public order in the Netherlands. The hostages' lives would be taken if any violence was used against the occupiers.

Buytendijk examined the phenomenon of pain on multiple levels, paying particular attention to the interconnections between these levels. He studied the physiology of pain receptors and tissues, the psychology of physical and social pain ("being hurt"), and the relationship between pain and attention, and between pain and physical activity. He

emphasized the importance of the meaning that the sufferer attaches to their pain and its significant influence on their physical experience. He wrote that the Christian who cheerfully bears their pain "in positive communion with the 'Man of Sorrows'" experiences a different kind of pain than the non-believer, who, under the influence of purely instrumental medicine, views their pain as a meaningless technical imperfection. [18 pp. 16-17] On the one hand, the sufferer was bound to their body; on the other, however, they had a certain freedom in how they related to that pain. Buytendijk's anthropological physiology therefore encompassed not only the body, but also the psyche, the environment, and purpose. He later developed this view of physiology further and presented it in the book *Prolegomena van een antropologische fysiologie* (Prolegomena to an anthropological physiology, 1965).

Anti-determinism and everyday life

For the Utrecht School, humans were not merely animal bodies with a thin layer of consciousness. Body and mind were two aspects of a whole – the *person*. That vision shaped not only physiology, but also psychology. [17 p. 151] The "new" psychology of the Utrecht School, as described by Buytendijk, was concerned with the "real human being, "and not with a schematic human being – a so-called 'neutral' test subject – placed in a stabilized laboratory situation and connected to equipment that allows only a limited number of responses." [19 p. 7] Nor did the school want to focus solely on the mind while ignoring the body, as traditional psychology had done.

Psychiatrist and psychologist Jan Hendrik van den Berg shared this view. From the integrated, person-centered Utrecht perspective, he criticized two influential movements in psychology in his 1952 inaugural lecture: Pavlov's behaviorism and Freud's psychoanalysis. These represented the two extremes of the "old" reductionist approach to psychology, which the Utrecht scholars sought to counter with their own approach. Pavlov and Freud's views on human nature were, at first glance, completely different. Behaviorism was limited to what could be observed and measured. It originated in the laboratory where Pavlov conducted his famous research into the salivation reflex in dogs. Freud's psychoanalysis, on the other hand, focused on the psyche, attempting to map its unconscious layers. Despite their apparent differences, Van den Berg believed these movements suffered from the same fundamental shortcomings, which the emerging phenomenological psychology sought to overcome.

Van den Berg was deeply immersed in the European phenomenological tradition. He had studied medicine, had obtained a doctorate under Rümke on the significance of phenomenological or existential anthropology in psychiatry, and visited many prominent figures in French and German philosophy, including Maurice Merleau-Ponty, Ludwig Binswanger and the psychiatrist and philosopher Henri Ey in 1946-47. He drank coffee with Jean-Paul Sartre's mother (Sartre himself was traveling when Van den Berg visited him) and stayed with Martin Heidegger for three days in his mountain hut in the Black Forest. [20 p. 19]

Van den Berg took issue with the way that "old" psychology reduced humans to products of their past. According to Pavlov, humans were merely a series of conditioned reflexes. For Freud, they were the playthings of their unconscious, ruled by instinct. [21 pp. 7, 12] (Van den Berg was expelled from the Psychoanalytical Society in 1949 for allegedly denying the existence of the unconscious). [20 p. 20]

Furthermore, both Pavlov and Freud based their views on human nature on "artificial" situations: the laboratory and the clinic, respectively. According to Van den Berg, the dogs in Pavlov's laboratory became "reflex machines." He recounted an incident in which some of Pavlov's dogs had to be rescued from their kennels during a flood. The sudden disruption of their laboratory routine caused some of the animals to lose their conditioned reflexes. Van den Berg's conclusion was that such reflexes were of little significance outside the lab. He believed that Freud's view of humanity was equally unnatural. Freud drew on his experiences with psychiatric patients, which Van den Berg believed was not a suitable basis for forming a view of healthy people. It did, however, make psychoanalysis suitable for treating the mentally ill, who, according to Van den Berg, were governed much more by their drives. However, anyone who reduced healthy people to "beings of drives," as Van den Berg accused Freud of doing, did not do humanity justice.

For Van den Berg, the truth about what it means to be human could not be found in laboratories, clinics, or therapy sessions. One had to "look where people live their everyday lives" – in their workplaces, at the dinner table, or on the road. [21 pp. 9-10, 15-18, 23] This focus on everyday experiences as a field of research is characteristic of the Utrecht School. The collection *Persoon en wereld* (Self and World), [22] compiled by the Utrecht scholars in 1953 illustrates this. Van Lennep's chapters are about the psychology of driving and the hotel room. Langeveld wrote a chapter about the experience of a child who retreats to a "hidden place" – the attic, the cupboard under the stairs, behind a curtain. Rümke's chapter on the aversion to one's own nose deals with what we would now call body dysmorphic disorder. Van Ratingen, a psychologist and colleague of Pieter Baan, wrote about the freedom of the prisoner.

Another example is Van den Bergs *Psychologie van het ziekbed* (Psychology of the Sickbed), a booklet he published in 1953. He provided a detailed description of how illness can influence a person's experience of themselves: How your world shrinks to the size of the bed, how time stretches out and speeds up simultaneously, and how the body betrays you, becoming an object "the doctor listens to, taps and feels." [23] Drawing on these patient experiences, Van den Berg set out to answer the following question: How should one behave toward a sick person, particularly someone who is chronically ill or dying? The booklet makes a plea for sensitivity and empathy, and warns against reducing patients to their illnesses.

At a time when it was common practice to withhold bad news from patients for fear of making them feel worse, Van den Berg defended the autonomy of the sick and their right to be informed about their condition. [20 p. 43] The principle of doing no harm in medicine, *nil nocere*, is "not just about the patient's current condition, but about their *whole life*." According to Van den Berg, life only acquires "seriousness" and meaning in the context of death. Therefore, the anxious concealment of an approaching death meant that the sick person was denied something essential. As the sole healthy figure in the realm of the sick, the doctor is the only person who could function as an "ally." [23 pp. 45-47]

4. The researcher as their own instrument: Methodologies of the Utrecht School

Psychologie van het ziekbed (Psychology of the sickbed) is illustrative of the empathetic approach for which the Utrecht School is known. This approach was evident in theoretical explorations, as detailed in *Persoon en wereld* (Self and World), as well as in clinical practice. Rümke described the emergence of this "phenomenological" approach to psychiatry as follows: "People learned to ask themselves: 'How does this special person experience things? How do they perceive things?' It involves empathizing with, describing, and defining as accurately as possible what the sick person is experiencing. The starting point of all phenomenology is to consider what is actually happening to the patient, how they experience something in their consciousness, and how it is presented to them." [3 p. 8,24 pp. 12-13] According to Van den Berg, all psychotherapists were therefore phenomenologists; after all, the patient's experience was central to their practice. "You cannot tell a patient, 'what you fear does not exist.' You can immerse yourself in the patient's world and say: 'I'm here too,' and thus avert the danger for that patient." [14 p. 35]

According to the Utrecht scholars, doctors, therapists, and researchers should not only receive technical training but also cultivate their empathy skills. This required a broad academic education (*Bildung*). Great literature was intended to sensitize them and provide inspiration for rich, phenomenological descriptions of reality. As Hans Linschoten, a student of Buytendijk, wrote about phenomenological psychology: "Valuable material for scientific work can be found precisely in the poetic and prosaic recreation of existence." [22 p. 246] The publications and speeches of the Utrecht scholars contain countless quotations and references to great figures from the world of literature. Rümke agreed with the critics who "accused" humanistic psychiatry of being more literary than medical in its approach. To him, however, it was not an insult. "They fail to recognize that this approach is *essential* for medical and psychological work," he said. [3 p. 13]

On the one hand, the empathetic approach required the researcher to eliminate their own prejudices in order to observe the "phenomenon" without bias. On the other hand, they also had to establish their personal identity; they were their own most important instrument. Rümke's view was that psychiatrists also had to be mindful of their own *internal responses* to patients. The most famous example of this is Rümke's *praecox feeling*, named after the earlier term for schizophrenia, *dementia praecox*. It represented a difficult-to-describe internal reaction to a patient with schizophrenia: "Even a brief examination reveals that the patient's capacity for 'empathy' is impaired. It's not just about empathizing with someone's emotions; it's also about being unable to connect with their personality as a whole." According to Rümke, patients with schizophrenia lacked a fundamental human trait, known as the "approach instinct": establishing instinctive and subtle contact through words, posture, and gestures. It was only when this instinct was absent, as in the case of "true" schizophrenic patients, that people became aware of its existence. This evoked a feeling of "despair": "Positioned opposite the person with schizophrenia, the researcher experiences something unusual within themselves. They cannot find the patient." For Rümke, this inability to "meet" the patient was a crucial signal and the most important condition for diagnosing schizophrenia. [25 pp. 64-68]

While "empathy" is possible from a certain distance, a true *encounter* required closeness. In his inaugural lecture "Het kennen van de innerlijkheid" (Knowing the Inner Self, 1947), Buytendijk argued that the encounter between human beings was the only way to gain true knowledge in psychology. This "sharing with each other" led to an immediate understanding that went even beyond the phenomenological description. It involved "knowing with the heart." [19 pp. 24-25] "Encounter" was a central theme in Utrecht thinking, as a way to gain insight into the individual other, but also into "humanity" in general. [17 p. 225]

Matryoshka dolls

Several years later, psychologist David van Lennep endeavored to systematize the diverse methods and functions of researchers. His primary focus was test psychology, as this was his area of expertise. From the 1920s onwards, he had been involved in psychological testing for purposes such as helping people to choose schools and careers, and selecting job applicants. In his inaugural lecture, "Gewogen, bekeken, ontmoet" (Weighed, Considered, Encountered), he distinguished three possible approaches to psychological research, each of which assumed a different relationship between the researcher and the subject.

The first approach, known as the "statistical-mathematical" method, involved "weighing" the test subject by evaluating characteristics, aptitudes, or developmental levels that were considered measurable. According to Van Lennep, this approach involved minimal interaction between the tester and the test subject: the psychologist was, at most, a "sorter" of human "material." The second method, known as "observation," involved an interpretive and empathetic phenomenological approach aimed at gaining a deeper understanding of the test subject as a unique individual. Qualitative tests were used for this purpose.

Van Lennep personally developed a test explicitly intended to make the test subject visible as a fully human individual. As the name suggests, the Four-Plate Test consisted of four images, each of which the test subject was asked to describe by telling a story. It was a so-called projection test: The idea was that the test subject would project something of themselves onto it, and this would be revealed through their interpretation (the Rorschach test, for example, has long been used in this way). Van Lennep spent years developing the test. He even subjected two prominent figures to it in 1946: Jean-Paul Sartre and Simone de Beauvoir, who came to his laboratory while visiting Utrecht. The philosophers were shown images of a motorboat, a train, a horse and a human being, and were asked to select the image that gave them the strongest impression of "speed." Sartre chose the motorboat because it was raised above the water. De Beauvoir chose the human being, who gave her the impression of a "consciously experienced speed." What Van Lennep concluded about their personalities from these remarks remains regrettably unknown. [26 p. 102]

Although it focused on individuals and their perceptions of the world, Van Lennep ultimately felt that the second method, which relied on empathy, failed to do full justice to the *person*. That person was still reduced to a snapshot in time, and was sometimes classified based on their "typical" characteristics. In doing so, the psychologist fixed what was "unfixable" for the test subject themselves, and what they "continually transcend, overcome, and recreate," namely themselves. According to Van Lennep, it is only in the "existential encounter" – the third approach – that the client can truly emerge as a human being, because the psychologist accepts them completely and sincerely "in their integral personality." The psychologist took a seat at the table, acting as a human being, and insofar as they still had a role to play, it was that of helping their fellow human. This was achieved through what Buytendijk described as "meeting with the heart" – gaining true understanding through genuine encounter.

According to Van Lennep, the three methods fit together like Russian Matryoshka dolls. The empathetic approach ensured that the statistical method did not lose sight of the human element, while the statistical approach was able to verify the results that had been obtained subjectively. It was only through "encounter," however, that a true insight into human beings arose. Moreover, the subject would only accept the results of the first two methods in the context of an encounter, as this assured they did not feel reduced to an object. In the third approach, the psychologist was also unequivocally loyal to the client. Their development was an end in itself. The psychologist's role was not to judge them for a job or training program, but to help them find their place in society.

5. Educating children and adults

This empathetic attitude and person-to-person interaction also characterized Martin Langeveld's pedagogical research. Before the war, he had been introduced to phenomenology when he attended lectures by German phenomenologists, including Martin Heidegger and Edmund Husserl. [27 p. 155] And he had examined countless children in his own practice. Former students remember his astonishing empathy and his keen clinical and pedagogical insight. [6 pp. 301, 319,28 p. 118] According to Langeveld, "being a child" was a unique mode of existence, far more than a process of simply growing up, and it was the task of the pedagogue to explore this way of "being." [28 pp. 103-105, 140, 151] Just as Van den Berg had mapped out the patient's experience in a phenomenological manner, Langeveld did the same in his article on "De 'verborgen' plaats in het leven van het kind" (The "Hidden" Place in the Life of the Child), in the aforementioned collection *Persoon en wereld* (Self and world). Using flowery language, he evoked the image of a child withdrawing into a "hidden place" – an attic, the space beneath the stairs, or behind a curtain – where the physical space and the child's imagination converge.

Langeveld's pedagogy was a normative and practical science, aiming to determine "how to act." [6 p. 217] A child's upbringing should be aimed at guiding them on their own unique path of development. He strongly opposed the type of pedagogy that reasoned from a predetermined end goal which the growing child was to achieve. He also rejected the notion of fixed developmental stages that children were assumed to pass through "naturally," viewing this idea as leaning too heavily on biological determinism. [6 p. 274,27-28 p. 105] Langeveld viewed a child's upbringing as a process of *personal development*.
He therefore believed pedagogy to be the core human science. From 1947 onwards, his teaching assignment was "Pedagogy in its entirety." This included disciplines now classified within psychology – developmental psychology in particular – which often resulted in boundary conflicts with psychologists. [29-30 pp. 152-153] His *Beknopte theoretische pedagogiek* (Concise Theoretical Pedagogy, 1946), in which he set out his vision of pedagogy, became a bestseller and was reprinted eighteen times, including revised editions. This book was used to teach pedagogy for years, even when assistants took over from Langeveld. His view of pedagogy as a practical and normative discipline became widespread. For decades, virtually every pedagogue and educator must have possessed it. [6 pp. 215-217, 219-220]
Diagnostic research and educational advice were at the heart of Langeveld's scientific work, as well as the educational training program he developed after the war. [30 p. 146] At the Pedagogical Institute on the Trans, which he founded, he examined countless children, mostly children with learning difficulties or behavioral problems, often from affluent backgrounds. [6 pp. 18, 112] The main purpose of the study was to gain an understanding of how a child viewed the world. The assessment lasted four and a half hours and included intelligence tests, free drawing assignments, projection tests, and an "informal conversation" with the researcher. The child's behavior in the corridor, their interaction with their parents, and even their handshake was closely observed and analyzed. Afterward, the parents received a report

outlining the child's character, attitude, inhibitions, sensitivities, and fears, along with the recommended advice concerning school or career choices. [6 p. 304]

Although the research covered the entire spectrum of Van Lennep, Langeveld's tools were primarily qualitative in nature. The intelligence test was an exception and was seen as a snapshot in time. Inspired by Van Lennep's Four-Plate Test, Langeveld developed his own projection test called Columbus – referring to humanity's journey of discovery through life. Most of the images featured a child as the central figure. The way in which the tested child interpreted them was intended to provide insight into how safe they felt, and how focused they were on exploration. [28 p. 138] The images were not interpreted according to a specific framework or explained through any particular theory; instead, the focus was solely on the impression of the individual child within their own world of experience. "No two children tell the same story," Langeveld later wrote about this. "And from the child's images and stories, one can discern their attitude towards life. [...] It is hardly surprising that a child who has undergone challenging experiences unconsciously draws upon them, revealing aspects of these experiences in the stories they create. […] Everyone tells 'their own story.'" [31 pp. 150-151]

The new human

Like most Utrecht scholars, Langeveld placed pedagogy at the heart of society. He had no kind words for human scientists who "tried to act like natural scientists" by keeping norms and values out of their research, as this, in his view, produced nothing but "science of no value." [6 p. 246] The aim of pedagogy was to raise children to become "self-responsible and self-determining" individuals. [6 p. 56] In the Netherlands of the 1940s and 1950s, this generally also meant: The formation of good *citizens* who contributed to the community.

Something that was feared to be at risk in the post-war period. There was widespread concern that young people would grow up in "anti-social families," become degenerate and "run wild" amid the post-war chaos, and no longer accept the established authority. The Minister of Education therefore initiated a nationwide study, for which Langeveld was one of the coordinators. In the report, *Maatschappelijke verwildering der jeugd* (Social Alienation of Young People, 1952), he gave a typical phenomenological description of the "mass youth." According to Langeveld, the way they spoke and moved, loitering on the streets in their distinctive clothing with their "wandering gaze," all testified to an existential emptiness. He saw an aimless crowd. [32 pp. 18-19]

He felt that young people could not be blamed for their lack of purpose. The mass youth was a product of modern alienation: They lacked form, because they lived in a "formless" world where traditional authority, customs, religion and bourgeois morality had disappeared without much to replace them. Langeveld also identified more specific causes, such as poor housing and limited opportunities for personal growth. He urged the government to take action on this issue, suggesting measures ranging from parenting courses and community centers to improved housing. [6 p. 259] The health of the entire community was at stake. The report helped lay the foundations for post-war youth policy.

Although strikingly somber, Langeveld's sketch was otherwise typical of the urgency and post-war optimism that permeated the thinking of the Utrecht School. Not only did the country need to be rebuilt, it was also time to "raise new people," in Pompe's words. [6 p. 266] The Utrecht vision of this new human being was both progressive and normative. Progressive because it liberated people from authoritarian structures and the compartmentalized mindset that had prevailed before the war, while also emphasizing individual self-development. Normative because the people of Utrecht expected this new human being to use "the higher" within themselves as a guiding principle; freedom was inseparable from responsibility. As in Langeveld's pedagogy, "self-determination" went hand in hand with "self-responsibility"; people were expected to become responsible and "moral" members of the community. [4 p. 72,14 p. 34,17 p. 225]

Adults, like the "mass youth," could also use some guidance. Help came from the state, which was becoming increasingly active in caring for the health of its citizens, as well as from a new type of guide: the expert. In a secularizing country, scientists and intellectuals were gradually taking over the roles of priests and ministers. The Utrecht scholars were often among those who played these roles. They were active in numerous social organizations, including the Federatie voor Geestelijke Volksgezondheid (Federation for Mental Public Health) and the Medisch-Opvoedkundige Bureaus (Medical-Educational Agencies), which examined and treated children with learning and behavioral difficulties. Judge Han Hudig, who will be discussed in more detail later, sat on various boards of social organizations, including youth protection organizations and the Rotterdamse Stichting Bevordering van Volkskracht (Rotterdam Foundation for the Promotion of People Power). Langeveld was the driving force behind the secondary education teacher training program [30 p. 146], regularly provided psychological, pedagogical and educational advice [6 p. 363,10 p. 14] and wrote popular parenting books, such as *De opvoeding van zuigeling en kleuter* (The Upbringing of Infants and Toddlers), a practical guide for parents that was reprinted many times. [6 p. 146] The Utrecht School also exerted considerable influence over Catholic organizations. A remarkable number of members were Catholic, including Pompe, Rümke, Linschoten and Buytendijk, who played a key role in Catholic mental healthcare. He spoke out against the repressive sexual morality prevalent among Catholics, believing it to be detrimental to mental health. [4 pp. 67-68,10 p. 14]

Criminals with dolls

Han Hudig did not need to seek out the "mass youth" or post-war social issues in general. She saw them in her practice every day. Langeveld would probably immediately have recognized the children she dealt with during her 25 years as a juvenile court judge as

"anti-social." Neglected children in the 1940s, whose parents had fallen into poverty; children who stole packets of butter, candy, tea, tobacco and food; and, in the late 1950s, children who were joyriding on mopeds. The latter was subject to a suspended prison sentence or a disciplinary school sentence. At the time, children could still be prosecuted. [33 pp. 158-159]

Although Han Hudig was (and still is) less visible than the others as a member of the Utrecht School, she is unquestionably part of it. In the 1930s, she and the criminologist Gerrit Kempe were the first assistants to Pompe at the Criminological Institute, which he had founded during the crisis using subsidies for unemployed lawyers. They equipped two rooms in the Wolvenplein prison with garden furniture brought from home, an old typewriter, and a sorting machine borrowed from the Dutch Railways. There, Hudig conducted statistical research into crime figures. She earned her doctorate in 1939 with a thesis examining why so few women were represented in those statistics. She attributed this disparity to the "female psyche."

While women were underrepresented in crime, there were no female judges at all in the 1930s. In her thesis, Hudig strongly advocated for the presence of women in the judiciary. [34 p. 248] Seven years later, in 1946, she became the first female judge in the Netherlands. When, after her appointment, a journalist somewhat naively asked if she would be wearing a judicial robe, she responded in a way that reflected her child-centered perspective: "I might, or I might not. It may make the children feel more at ease if I don't wear a robe." [35] In 1959, she was appointed as a professor by special appointment at Utrecht University.

Hudig called for greater focus on the subjective experience of each individual child. In determining the sentence, the judge needed to give more consideration to the *impact* of the punishment on the individual child. According to Hudig, the impact was different from that on adults, as punishment played a far more significant role in a child's daily life. This explained why children tended to view "any judicial response to a violation of norms as a punishment"; the legal distinction between punishment and measure meant nothing to them.
For children, punishment was also accompanied by fear, as those who administered it were typically the people on whom they depended. Hudig therefore urged the judge to see himself through the eyes of the child. "If [children] lack an understanding of abstract concepts like society or the legal system, the judge may seem to them like nothing more than an unfamiliar 'boogeyman', a frightening figure. Boogeymen are not popular in pedagogy because they cause more harm than good to growing children!" In short, if the purpose of the punishment was to help the child reintegrate into the community, it had to be tailored to the individual. [36 pp. 13, 16, 30]

The question of whether the child *understood* what it had done wrong was crucial in this regard. If it did not, then the child could not be held criminally responsible and should be considered innocent. Hudig described the sometimes very young children who appeared before the juvenile court: a six-year-old boy, who was prosecuted "for handling stolen pennies," a seven-year-old girl who played with dolls in the reformatory she was sent to, and "a 12-year-old boy with a cognitive disability" who was convicted for stealing garden gnomes and placed in a state reformatory. Is that in line with our legal principles? Hudig asked rhetorically. [36 p. 11] She would devote the rest of her career to improving the legal position of children.

6. Humanization of the criminal

According to forensic psychiatrist Pieter Baan, juvenile courts were a positive exception to broader trends in the legal system in 1952. At least here the judge spoke to the child . The children's judge admonished, reprimanded, or imposed punishment, but "always with compassion and caution, ensuring the child understood what was happening, carefully listening to the child welfare officer and, when necessary, the psychiatrist." Baan's message was clear: If only adult courts followed the same approach, as many judges issued verdicts without really knowing the offender. [37 pp. 10-11] Over twenty years after Pompe's plea for greater attention to be paid to the "person of the offender," his students observed that there was still considerable room for improvement.

Nevertheless, the seeds that Pompe had planted before the war – with his plea to see the offender as a human being – began to take root in the fertile post-war soil. This was fueled by the fact that numerous members of the Dutch upper social circles had experienced prison from the inside during the war, giving them first-hand experience of what it was like when a powerful state turned against them. Among them were also members of the Utrecht School. Gerrit ("Ger") Kempe had been active in the resistance and had been imprisoned briefly, while Pompe was forced into hiding during the final years of the war. These experiences deepened their commitment to humanizing criminal law and criminology.

Reflecting on earlier days, Kempe wrote in 1975 that, before the war, offenders were still regarded as people who had rendered themselves "less worthy" through their crimes. [38 p. 95] After the war, the Utrecht scholars spread their view of criminals as fellow human beings who, with personalized help and treatment, could atone for their sins and improve themselves. Their plea carried weight at a time when prisons were overcrowded and there was widespread concern about high recidivism rates. An increasing number of people became convinced that it was also in the interest of society to help the offender. In 1951, rehabilitation was legally established as the goal of imprisonment.

Not only the social but also the academic climate had changed after the war. This was the result not only of Pompe's ideas, but also of those of the psychologists and psychiatrists – the other "department" – of the Utrecht School. There was active exchange between the

two departments: person-centered, phenomenological psychology and psychiatry on one side, and criminology, forensic psychiatry, and law on the other. Pieter Baan, for instance, cited the work of Buytendijk, Rümke, and Van den Berg in his public lecture. [39] Buytendijk's influence is also clearly evident in the work of Ger Kempe, who was a strong advocate of the person-centered approach in both probation and judicial guidance. [40 pp. 121-122]

Before the war, Kempe had gained extensive experience in probation work and had been involved in training probation officers – a role he continued to fulfill after the war. Even after becoming a professor of criminology in 1949, he continued writing legal information reports, which was uncommon at the time. [41] To properly inform the judge about the *person* behind the suspect, Kempe argued that investigators should cease treating offenders as "objects." He referenced the significance of *encounter* as emphasized by Van Lennep, urging investigators to engage with suspects directly, rather than merely "observing" them. [42 pp. 14-15] In order to enable unbiased contact with the offender as a human being, the probation officer, forensic psychologist and psychiatrist had to temporarily relinquish their roles. This required them to explore the perpetrator's sense of guilt and take their perception and interpretation of their actions very seriously. This approach would yield "infinitely more reliable" information about the perpetrator than existing analytical reporting. The story of the suspect or offender was crucial in determining the severity of the punishment. [42 p. 22] According to Kempe, the adviser's role was not so much to predict whether the offender would re-offend, but rather to identify areas for improvement. These were to serve as the foundation for the rehabilitation plan. [43 p. 61] And, in the case of psychiatric issues, the treatment plan.

"Holistic thinking" and white coats

On November 1st, 1949, the first five prisoners arrived at the newly established Psychiatrische Observatie Kliniek (Psychiatric Observation Clinic, POK) on the Gansstraat in Utrecht. The clinic – the precursor to the current Pieter Baan Center – was the first major achievement of the Utrecht School. It soon housed more than 20 prisoners, spread across small rooms on either side of a long corridor. The conditions in the former prison were far from ideal: Three people shared a 13.5-square-meter cell, with ventilation facilities considered "limited." Nevertheless, many of the prisoners were pleasantly surprised: They were addressed as "sir," provided with pyjamas and bedding, and treated kindly by nursing and security staff. [44 p. 259]

The POK was intended to contribute to a better selection of prisoners, determining who needed treatment and who needed to be committed, in order to help alleviate the pressure on the overcrowded asylums for those committed to custody. It was also an experiment with the new Utrecht approach, which emphasized treatment. At the POK, prisoners were treated more like patients than offenders. Every effort was made to create a medical atmosphere, as much as was possible within the constraints of the old, cramped prison. Nursing care was provided, and all staff members, including the psychologist, wore white coats. [45 pp. 87-88] Prisoners were observed for six to eight weeks. After this period, a report was sent to the judges outlining the prisoner's personality, mental state, and criminal responsibility, along with recommendations regarding treatment or the measures to be taken. The POK was also at the forefront of a new, multidisciplinary approach, which Pieter Baan referred to as "holistic thinking" (in Dutch: "overkoepelend denken"). [46]

Baan had studied medicine, earned his doctorate under Rümke, and, like Kempe, gained practical experience in judicial guidance, having written forensic psychiatric reports since 1942. He believed that forensic psychiatry should, following the example of general psychiatry, focus on "the whole person in their uniqueness and irreproducibility." The offender had to be studied as a subject, and this required "teamwork." The psychiatrist was to collaborate on equal footing with clinicians, legal experts, sociologists, psychologists, pedagogues, and – for addressing any "metaphysical questions that might arise" – a philosopher. [39 pp. 12-13]

The team led by director-physician Baan and chief clinician Anne Marie Roosenburg comprised an internist, several psychologists, a judicial information officer, and nurses specialized in the treatment of neurological and psychiatric disorders. They regularly discussed patients with officials from the Ministry of Justice, probation officers, criminal law scholars, and criminologists. [47] These interprofessional "encounters," however, were constrained by hierarchical boundaries. For example, prison guards did not yet contribute to observation and reporting, and only the head nursing staff was allowed beyond the "iron curtain" – the barred door separating the psychologists' and psychiatrists' rooms from the rest of the POK. [45 pp. 99-100]

A few years later, in 1955, the Henri van der Hoeven Clinic opened its doors, marking the Utrecht School's second major achievement. The clinic treated "disturbed delinquents," first for two years under Baan's direction, followed by 25 years under Roosenburg. Roosenburg described the practitioner's role as that of a "comrade in arms." She saw it as her duty to provide the most effective treatment possible, so that the patient's freedom would be restricted for the shortest time necessary. [40 p. 111]

7. The school flourishes

The Utrecht School was by no means solely an academic movement. Over the years, the Utrecht scholars gained increasing social influence, which they used to promote their vision and to call out injustices. Kempe and Pompe were members of the so-called Psychopathenraad (Psychopath Council), which advised the department. [40 p. 95] They were also members of the central advisory council for the prison system, psychopath care and probation, which advised the minister directly. Pompe would call up the minister whenever he believed the minister had said something nonsensical. [48] This social influence proved useful in the establishment of the POK, and the Van der Hoeven Clinic

was also the result of Baan and Roosenburg's long lobbying efforts. Even so, the Utrecht scholars frequently came up empty-handed. Much to his lifelong frustration, Pompe's appeal to reduce what he perceived as inhumanly long prison sentences was unsuccessful. He also had to abandon his plan to look into the "voluntary" nature of castration among sex offenders. Well into the 1960s, many of them, including homosexuals and exhibitionists, consented to castration in exchange for parole. The ministry did not grant permission for the investigation. [49 p. 52]
The book *Meningen van gedetineerden* (Opinions of Prisoners, 1958) by criminal law expert Rijk Rijksens did have a significant social impact. In the book, Rijksen – a colleague of Baan – for the first time gave prisoners the opportunity to speak up about their experiences. They described the "brutally cold" and poorly ventilated cells, the lack of sunlight, sleeping on old straw mattresses under unwashed blankets, and drinking murky water. Instances occurred in which prisoners died by suicide or died because they were refused medical assistance. "How can we expect a released prisoner to rejoin society as an active member when they are repeatedly made to feel unworthy throughout the entire criminal justice process?" Rijksen wrote. [50 pp. xii, 153, 158, 164-168, 186, 194, 198] Shocked by the commotion, the ministry bought up all copies, but the newspapers had already publicized it, and a reprint followed in 1961. [40 p. 130]

The Utrecht criminologists and lawyers were not the only ones to voice their opinions, Van den Berg also played an active role in shaping the public debate. His bestseller, *Medische macht en medische ethiek* (Medical Power and Medical Ethics, 1969) had a significant impact. In this influential work, Van den Berg raised critical concerns about new medical technologies that could be used to extend life indefinitely. According to him, this threatened to turn doctors into servants of technology, causing unnecessary suffering in their quest to prolong life. Van den Berg reinforced his argument with shocking descriptions and photographs of patients: a complete lower body amputation; a child with spina bifida who died after undergoing six operations. He wrote that the physician should not be guided by what was *possible* from an instrumental-medical point of view, but should engage in conversation with the patient about what was *meaningful*. The booklet had a major impact on the public debate about euthanasia. [20 p. 48, 51]

The Utrecht scholars became public intellectuals, regularly appearing on the radio and traveling around the country to give lectures. They also wrote for a broad audience – and were widely read. Langeveld's practical guide for parents, for example, *De opvoeding van zuigeling en kleuter* (The Upbringing of Infants and Toddlers, 1938), was reprinted several times. [6 p. 146] Buytendijk was already a relatively well-known figure in the Netherlands when he assumed his position in Utrecht, having written science columns for De Telegraaf and De Tijd since the 1930s. [4 pp. 48-49] He launched a series of popular science paperbacks, the "Aula" series, which became hugely successful in the 1950s. [10 p. 14]

The Utrecht School also refrained from drawing a rigid line between the university and professional practice. This practice was, in fact, a central component of their scientific approach – arguably the most important one: knowledge emerged through interactions with patients, clients, and colleagues. Almost all Utrecht scholars either had their own practice or worked "in the field," within probation services, psychiatric institutions, and courts, in educational and psycho-therapeutic practices, and in clinics. For Rümke, the clinic was the center of psychiatry, including academic psychiatry. It served as a forum that integrated the various foundations and sub-disciplines of the field. He wrote that researchers often have to remain within the confines of their own theory or method. In the clinic, however, specialist knowledge from a variety of niches came together – and it was only there that its true value could be fully recognized. It was up to the clinician to compile a package from all these sources for each individual patient. [13 pp. 45-47]

Hudig held a similar view of the judiciary and saw it as a forum in which the knowledge of various experts was brought together. In her role as judge, she wanted to "oversee the process to a certain extent and gain an understanding of the work of other specialists, such as social workers, psychologists and psychiatrists." For her, practice took precedence over science. From 1957 onwards, she delivered weekly lectures in Utrecht as a professor by special appointment. However, when this became too demanding alongside her judicial duties, she resigned from her university position. She did not want to teach without continuing her practical work alongside it. [33 pp. 160-161]

L'ecole d'Utrecht: International recognition

The Utrecht scholars were recognized as a distinctly Utrecht-based movement – in 1959, the French legal scholar Jacques Léauté wrote admiringly about the new *école d'Utrecht* in the *science criminelle*. [52] At the same time, they were part of an international network of like-minded scientists and philosophers. They published regularly in German and French, and their Dutch publications were often translated into other languages. Langeveld even wrote several of his books in German first, before writing them in Dutch. [28 p. 137]

Many members gained international recognition. Rümke became a world-renowned psychiatrist and worked for the World Federation for Mental Health; Baan enjoyed an international career as head of the Mental Health Department at the World Health Organization, while Buytendijk was already a leading figure in European human sciences prior to the war. His publications on humans and animals were cited with approval by Martin Heidegger and the French phenomenologist Maurice Merleau-Ponty. Van den Berg also spent considerable time abroad. In the United States, he contributed to the development of an American, phenomenologically inspired psychology during the 1960s and 1970s. The leader of this movement, Amadeo Giorgi, paid visits to Van den Berg, Linschoten, and Buytendijk in Utrecht. [20 p. [22,27 p. 162]

It is worth noting that many Utrecht scholars enjoyed significant popularity in South Africa and Japan. [4 p. [82,27 pp. 145, 148] In South Africa, the phenomenological approach offered a valuable alternative to the prevailing American behavioral sciences. South African students studied the works of Langeveld and Buytendijk and traveled to the Netherlands to study with the Utrecht scholars or pursue their doctorates. In turn, the Utrecht scholars were invited to deliver lectures and guest seminars abroad. Van den Berg gained recognition in South Africa, mostly due to his phenomenological-historical method, which will be explored in more detail later. He visited the country multiple times and taught at several universities there. Langeveld's pedagogy gained a foothold there through a friendly dean of pedagogy faculty. His work resonated with Afrikaner pedagogues, who, somewhat paradoxically, integrated his ideas into their apartheid philosophy – an association from which Langeveld kept as much distance as possible and about which he never publicly commented. [6 pp. 342-343,27 pp. 152, 156-158, 162-165] It was Langeveld's student, Shuji Wada, who ensured the dissemination of his pedagogical ideas in Japan. Wada's translations of several of Langeveld's books were received with great interest. According to Wada, Langeveld's view of children was so different from the established ideas there that it caused something of a shock. In the 1970s, Wada established a Langeveldian pedagogical center at the University of Tokyo. [6 p. 364,27 p. 364]

School formation: Psychology and pedagogy students

The Utrecht School also flourished within the university. This was a time when disciplinary boundaries were still fluid, and the current division into the human sciences, natural sciences, and social sciences had yet to be established – psychology and pedagogy were then part of the Faculty of Arts and Philosophy. In this context, the Utrecht scholars were able to apply their broad human sciences perspective in educational practice and leave a lasting imprint on the emerging academic programs. The fact that professors, at the time, still had considerable freedom to decide what to include in the curriculum was a significant advantage. [53 p. 24] The Utrecht School had a particularly significant influence on the psychology program. This was because the School was well represented in the Sassen Committee, which the government established shortly after the war to prepare a bill regarding the education program and professional title of psychologists. Buytendijk, Langeveld, Rümke, and Van Lennep were all members of this committee, which had a significant impact on shaping the identity of the psychology program. [29 p. 132]

It was among the students of psychology and pedagogy that the Utrecht School most clearly exhibited the characteristics of a true school. [6 p. 286] Student numbers grew rapidly – the psychology program expanded from 100 students in 1949 to 500 by 1965 – and Buytendijk's lectures sometimes attracted as many as 200 attendees. [4 pp. 60-61,14 p. 55] There was a psychology student association, a newsletter, and even an anthem:

"In Utrecht daar studeren wij in de psychologie
en zien de waar' essentie in de fenomenologie [In Utrecht, we study psychology and see the true essence in phenomenology];
de and'ren kletsen maar in 't rond en weten er niets van [while others only chatter on, they haven't got a clue]
't is evident voor elk student [it's evident to every student]
dat het zo niet door kan gaan [that this can't go on;
fenomenologie zal alleen nog maar bestaan [phenomenology will be the only one to remain]." [14 pp. 28-29]

Shortly after the war, in his very first lecture, Buytendijk announced that his primary aim was to help his students *unlearn* certain assumptions – specifically, those of positivist science. That message appears to have resonated. Jos Dijkhuis, then a student and later a professor of psychology in Utrecht, recalled an atmosphere of innovation and a sense of superiority over "simplistic" statistical approaches. [54 p. 9]

Students actively participated in practical work. At the Pedagogical Institute under Langeveld, they assessed children, attended play therapy sessions, administered projective tests, contributed to report writing, and were allowed to attend advisory meetings. [7,54 p. 11] Conversely, practical experience was also incorporated into lectures. Pompe and Kempe discussed case studies, based on extensive case files. [40 p. 129] Baan received permission to invite offenders to his lectures, allowing them to speak about their "character and background," and, if willing, their motives. [39 p. 26] Patients were brought into the lectures of Roosenburg [55-56 p. v] Baan, and Rümke – although, according to one former student, Rümke spoke more with the patient about the students than with the students about the patient. [41]

Hans Linschoten was one of the first students to be trained within the Utrecht School. He was described as a brilliant man. Having survived a so-called "Jappenkamp" (Japanese internment camp) as a child, he swiftly overcame his educational setbacks, went on to study psychology, and earned his doctorate under Buytendijk in 1956. He was well versed in the phenomenological psychology of Utrecht, and, as an assistant at the Psychological Laboratory, he was equally skilled in experimental psychology. When Buytendijk retired in 1957, Linschoten succeeded him as professor and head of the laboratory. He seemed like the perfect candidate to continue Buytendijk's work. [57 pp. 103-118]

A second promising psychologist from Utrecht was Ben Kouwer, with whom Linschoten had collaborated in the lab. After studying chemistry and music theory, he switched to psychology during the war. In 1945 and 1946, he conducted psychological-statistical work at the *Institut de Biométrie* in Paris. After obtaining his doctorate in the Netherlands,

he went on to work at Van Lennep's ICIP. Kouwer specialized in test psychology and in new statistical techniques that were gradually emerging from abroad. He also developed computer programs to support these techniques. Like Linschoten, he was well versed in both phenomenology and the more "exact" methods. [58 pp. 216-217]

Linschoten and Kouwer were among the leading figures of the second generation in Utrecht psychology. They appeared to be catching up with their mentors in terms of productivity – legend has it that together, they authored a psychology handbook in just 48 hours. [58 p. 187] That book, *Inleiding tot de psychologie* (Introduction to Psychology, 1951), was reprinted many times. Yet they also expressed strong criticism of the Utrecht School, and Linschoten was even held partly responsible for its downfall.

8. Criticism

Utrecht phenomenological psychology had always had its critics. At the forefront were those who believed that the human sciences should follow the example of the natural sciences and focus on the objective and the measurable – an approach that the Utrecht School had consistently opposed. This scientistic view of science emphasized the discovery of causal relationships through laboratory experiments. A prominent representative of that perspective was Adriaan de Groot, the man who had competed with Van Lennep for the psychology chair in 1946 but was ultimately unsuccessful. As a lecturer and later professor of applied psychology in Amsterdam, he would become a leading scholar in the field. He became known as the creator of the "Cito" test, introduced in the late 1960s, and gained prominence among behavioral scientists for his influential methodological standard work, *Methodologie: grondslagen van onderzoek en denken in de gedragswetenschappen* (Methodology: Foundations of Inference and Research in the Behavioral Sciences, 1961).

De Groot believed that psychologists ought to pay more attention to the empirical testability of their claims. [59 p. 278] The proper starting point for behavioral science research was not "unfiltered reality," but rather an analysis of the method; only after understanding what the method can achieve can a research question be formulated. While the Utrecht School declared the researcher to be their own instrument, De Groot had little confidence in the reliability of human judgment. His "Cito" test, for example, was intended as a tool to protect schoolchildren from their subjective and biased teachers who believed they knew the children and what was best for them. [59 pp. 291-292] Langeveld, by contrast, believed that the test defined a child's development far too early and overlooked developmental possibilities that could not be measured by a test. [60]

In his 1961 book, *Methodology*, De Groot outlined his empirical, hypothesis-testing approach to science. In it, he launched a direct attack on the phenomenologists. In his view, they effectively placed themselves outside the realm of science by rejecting the

"limited," "natural scientific" methodology (his quotation marks) and the impossible-to-verify statements associated with it. He viciously wrote that there was nothing wrong with phenomenology, as long as it was not practiced by professors without a disclaimer, as this gave it a scientific pretension. [61 p. 373] Needless to say, this did not go down well in Utrecht, at least not among the first generation. When students invited Linschoten to a book discussion of De Groots *Methodologie* (Methodology), he agreed to participate on the condition that they promised to wrap the book in newspaper. That way, if they happened to run into Langeveld, he would not recognize the book. [62 p. 19]

Idols and magic

De Groot's criticism came from outside, which was frustrating, because *Methodologie* (Methodology) was a huge success, but predictable. The critique from within was probably more painful. Kouwer delivered the first blow, publishing an article in 1953 in which he referred to phenomenological psychology as "modern magic." He wrote that phenomenology attempts to grasp the "essence" of things through a non-rational approach, namely through "encounter." It "does not take the world as a fact, but as a *revelation*." Therefore, in his view, it resembled magic more than science. A psychology that declared phenomenology as its method deserved the same characterization.

That did not mean that phenomenology had no place at all in research. Science could benefit from phenomenology "precisely because, as a non-scientific method, it can provide insights when scientific methods alone are insufficient to study an object fully." Such a supplement was necessary because humans, when regarded as subjects, cannot be fully captured by scientific methods that examine them as objects. However, it was important to make the distinction between the two approaches clear. [63 pp. 410, 412] Kouwer left for Groningen in 1955, where he became professor by special appointment in applied psychology.

Shortly after taking office in 1957, Linschoten hinted in an interview that phenomenology was "not considered binding" in Utrecht and that neo-positivist influences were infiltrating psychology. His book *Idolen van de psycholoog* (Idols of the Psychologist), published in 1964, has gone down in history as a radical break with Utrecht's intellectual tradition. By "idols," he was referring to the everyday prejudices and assumptions that can cloud scientific thinking. Linschoten believed that scientists should strive to avoid these. He therefore advocated for "an objective psychology that quantifies to the greatest possible extent." [64 p. 11] A stark contrast to the idea of an "encounter with the heart."

Moreover, Linschoten dissected the work of his (former) colleagues. He addressed them by name and reprimanded them, often in a teasing manner, for making statements based on nothing more than everyday human experience – in other words, "idols." His critique always revolved around the question, "how can you be so sure?" [64 pp. 231, 295, 351-352] In doing so, he did not spare himself. He too, was once convinced that "reductive models" distort

reality. Yet, he had since abandoned that conviction and now believed that there was nothing wrong with reducing reality to a measurable form.

To illustrate this, he used an analogy of the type often used by the Utrecht School, but with a twist. You could describe a Beethoven string quartet as the sound of horse tails scraping against cat intestines, he wrote.[1] Phenomenologists would likely dismiss this as a reduction that distorts the essence and beauty of music. Yet, is the musical notation Beethoven used to record his compositions not also a simplified representation, one that cannot fully capture the experience of the music? According to Linschoten, psychology aimed to develop a musical notation, so to speak, through which human behavior could be expressed: reducibly descriptive, predictable and, if possible, reproducible. And "[w]hoever needs comfort for the apparent dehumanization of people in reductive models should remember that people in need are best served by efficient tools rather than costly words with no verifiable effect." [64 p. 33]

Seen as "patricide," this direct challenge to the old guard dealt a major blow to the Utrecht School when Buytendijk's successor, the influential Linschoten, abandoned phenomenological psychology in favor of an empirical, experimental approach. Even if his former colleagues had wanted to discuss the book with him – which is doubtful – that never became a reality. Linschoten died of a heart attack shortly before the book was published, at the age of 38. Buytendijk, already retired, returned to Utrecht to temporarily fill Linschoten's position until a successor was found.

The field of pedagogy also saw its succession disrupted by a conflict between teacher and student. Dolph Kohnstamm seemed like a suitable successor to Langeveld. He had studied under De Groot, but moved to Utrecht in the early 1960s to pursue his doctorate under Langeveld, which he completed in 1967. Two years later, he was offered a lectureship. Everything appeared settled until, in his inaugural lecture, he advocated for "systematic empirical research" in the new child and developmental psychology program. With that single word – "systematic" – everything collapsed. The word "empirical" could still be understood as referring to the Utrecht School's impartial, phenomenological mode of observation. "Systematic-empirical," however, referred to the school of thought against which Langeveld deliberately positioned his practical pedagogy. Langeveld was not willing to accept this quietly. Kohnstamm wanted to switch to psychology, which escalated the conflict between pedagogy and psychology over which of the two disciplines developmental psychology should belong to. After a year, Kohnstamm submitted his resignation. [6 pp. 377-378,28 p. 144]

1 The horse-tails-and-cat-intestines- analogy belongs to William James.

The ideology of objectivity

The personal and generational conflicts probably contributed to the decline of the Utrecht School's influence in the 1960s and 1970s, but they were also *symptoms* of larger shifts. Ultimately, it was the dominance of a scientistic conception of science that sealed the fate of the Utrecht School within what we now call the social sciences. Shaped by the American social sciences, which exerted significant influence in Europe during the Cold War, this so-called "Anglo-Saxon style" rose to international prominence. If you wanted to build a career, it was better to avoid hefty books on "the human being" and publish articles on narrow experimental research in scientific journals instead. [27,65 p. 28] The rise of computers, together with the development of ever more sophisticated statistical methods, further boosted quantitative approaches. Kouwer was a leading Dutch pioneer in this area. Empathy and description gave way to measurement and experimentation, and more and more people became convinced by what De Groot referred to as the ideology of objectivity (he used the term appreciatively). "Idols" had to be banished.

Linschoten and Kouwer were not the only members of the Utrecht School to voice concerns regarding the phenomenological method. Van Lennep, for instance, stated in 1956 that intuition was not particularly suitable for making predictions. [7] Even Rümke's view of psychiatry was slowly shifting toward biomedical approaches. Whereas in 1937 he had warned against the limitations of a narrowly natural-scientific approach to psychiatry, by 1954 he sought to remind psychiatrists that a purely phenomenological description was not sufficient. Such a description was, in his view, still valuable, but the psychiatrist needed to link it to "what should be his most fundamental domain as a physician: the study of biological functions." [66 p. 199]

Rümke, too, overturned an established artistic metaphor: A psychiatrist who works solely phenomenologically, he argued, is like a geophysicist sent out to map a region who, instead, returns with a painting. A painting of mediocre quality, for a geophysicist is, after all, no painter. According to Rümke, a psychiatrist is a doctor, and doctors primarily conduct scientific research: research based on biology. This did not have to be an exclusively biological basis, and humans were not biologically determined. Still, Rümke maintained that "eventually, a significant portion of the findings in the humanities could be interpreted biologically, albeit in a reduced form." [66 p. 205] This shift in Rümke's thinking runs parallel to developments in medicine described by Frank Huisman in this collection (see Chapter 3). The trends that Buytendijk had bemoaned before the war persisted afterward. Biomedical research became increasingly reductionist and specialized, and medicine lost sight of the human being.

Meanwhile, Van den Berg took a completely different path. Shortly after his departure for Leiden in 1954,where he became professor of phenomenological method and conflict psychology, his work took a turn that further distanced him from Utrecht phenomenology

in terms of content. In 1956, he published *Metabletica,* the book that made him a bestselling author. Metabletica was a phenomenological historiography, which emphasized the uniqueness and distinctiveness of historical periods. It attached importance to simultaneous, seemingly independent developments, and did not draw a sharp distinction between reality and the experience of that reality. The Utrecht scholars reacted somewhat uncomfortably to the book, and over time fewer and fewer Dutch academics took it seriously. Even so, Van den Berg succeeded in reaching a large national and international audience outside academia. In the 1970s, however, his popularity in the Netherlands fell sharply when he argued that races were scientifically unequal and refused to distance himself from South Africa's apartheid regime. [20 pp. 22, 28, 34, 263-265,27 pp. 163-164]

The influence of the Utrecht School in social sciences gradually declined in the 1960s and 1970s. Two years after Linschoten's death, Buytendijk officially retired, and his successor soon abandoned phenomenology. [6 p. 362] Rümke retired in 1963 and Van Lennep followed in 1967. Afterwards, the person-centered approach rapidly disappeared. The second generation quickly concluded that the future of the field lay in the Anglo-Saxon style of scientific research. [14 p. 43] After his retirement, Buytendijk complained about the new generation of psychologists, who were concerned only with "facts and figures, adding and subtracting." [4 p. 74] Langeveld, who remained active the longest – well beyond his retirement – witnessed firsthand how the scientistic approach came to dominate psychology and parts of pedagogy, and how his practical-scientific pedagogy gradually eroded. [27 p. 156-28 p. 102] His attention increasingly turned to international activities, including lectures in Israel and Japan. When he retired in 1971, the majority of younger researchers had already moved away from Langeveldian ideas. [6 pp. 392-393,28 p. 143,30 p. 155]

Democratization movements

On top of the rise of the objectivist conception of science, there was another societal shift that destabilized the Utrecht School's intellectual framework. With the democratization movements of the 1960s and the growing opposition to all forms of authority, the paternalistic Utrecht style quickly became outdated. Van Lennep later admitted, somewhat sheepishly, that the spirit of the times changed rather unexpectedly. [14 p. 43] One example is the so-called antipsychiatry movement, which delivered sharp criticism of the "medicalization" and "hospitalization" of psychiatric patients, as well as the unequal relationship between psychiatrist and patient. Jan Foudraine, one of the leading figures of Dutch antipsychiatry, targeted the "phenomenologists" in his bestseller *Wie is van hout… Een gang door de psychiatrie* (Not Made of Wood: A Psychiatrist Discovers His Own Profession, 1971). He believed that, despite their meticulous descriptions of patients, they still "observed them at a distance. They did not enter into a relationship, were not genuinely involved or committed as caregivers." [67 pp. 108-109] He viewed the practice of bringing patients into the lecture hall for "demonstration" purposes as dehumanizing. This stood in stark contrast to the enthusiastic accounts of Rümke's closeness to the patient, and the "magical circle" he created during lectures around himself and the patient, allowing the patient to completely forget the more than a hundred students present. [41,68]

Antipsychiatry was overtly critical of society, which also marked a departure from the more conformist Utrecht School. The Utrecht scholars had generally regarded the social order as given: those in need of help were to be guided toward successful integration into society. Antipsychiatrists often regarded society itself as the root of problems, viewing the patient's disorder as a manifestation of a dysfunctional social environment. Such anti-authoritarian, antipsychiatric ideas transformed the practice at the Psychiatrische Observatie Kliniek (Psychiatric Observation Clinic, POK). This took place long after Baan had left. In 1957, after some hesitation, he accepted an offer to become a professor of psychiatry in Groningen. [47] In the 1960s, his successor at the POK continued along the path that Baan had laid out for some time, but in the 1970s, the medical atmosphere that Baan and his colleagues had worked so hard to create disappeared alongside the white coats. Up to that point, the relationship between researcher and subject had primarily been that of doctor and patient. From then on, efforts were made to establish a more egalitarian relationship. Researchers had to ask themselves whether they were truly so different from the individuals they were studying. Group work was introduced, and prisoners were given greater responsibilities and a voice in decision-making. Hierarchical relationships within the team also disappeared: The "iron curtain" between nursing staff and psychologists and psychiatrists was dismantled. [45 pp. 99-105] In 1978, POK became the Pieter Baan *Center*: the word "clinic" was no longer appropriate.

The 1960s also transformed criminal law, both in practice and in scholarship. As a result of protests and acts of civil disobedience, increasingly assertive citizens appeared before the courts. Those who resisted the social order did not view the judge as an impartial legal authority, but as a representative and enforcer of that order. [38 pp. 99-100] At the same time, criminal law as an academic discipline grew increasingly critical in its approach. Solidarity with people who faced a powerful state took on a different form: the "weaker" individuals were now to be emancipated rather than educated. [40 p. 136,69 p. 22] Over time, Kempe's views on criminal law grew more critical. After Baan's departure to Groningen and Pompe's retirement in 1963, he was the only remaining member of the central trio of the Utrecht School in criminology and law (Hudig had always focused more on her work as a judge). In his final public lecture in 1974, he shocked his audience with his downright pessimistic remarks: criminal law was inherently "discriminatory," punishment constituted legitimized violence, and violence would never resolve anything. [38 p. 102,70 p. 9] Kempe retired in 1976.

9. A slow turn

The Utrecht School was no match for these upheavals in science and society. This vulnerability may have resulted from the wide range of methods and disciplines included under the Utrecht School. For each member, the "phenomenological method" appeared to have a slightly different meaning. Buytendijk sought to establish a theoretical basis for an "anthropological" physiology. For Rümke and Langeveld, phenomenology was the art of precise and unbiased observation. For Van Lennep, Linschoten, and Kouwer, it served as a method for formulating relevant research questions. [6 p. 330] This perhaps made it difficult to defend "the" ideas of "the" School against the rise of Anglo-Saxon scientific approaches – or at least to transmit those ideas to the next generation as a recognizable and clearly defined whole.

Moreover, the erudite, eclectic style of the Utrecht scholars was closely tied to its principal members. The intellectual framework was a product of their long, multidisciplinary careers. Students often found themselves daunted by the vast array of philosophical, subject-specific, and global literature they were required to study. The American approach to science, characterized by its strict methodology, offered a compelling alternative. According to Langeveld, it offered "a sense of security, solid ground beneath one's feet." [14 p. 45,28 p. 149]

Several critical comments can be made with regard to the dichotomy between a disappearing "humanities-based" approach and a prevailing "natural-scientific" approach, as well as between the "paternalistic" and "democratic" styles. Several components associated with the scientistic approach – laboratory experiments and quantitative methods, for example – were also reflected in the Utrecht human sciences. With the emphasis on *component* however: they were part of a broader science, not the end goal. Buytendijk, in particular, integrated experimental findings with intuitive and descriptive approaches in his anthropological physiology. At the Van Lennep's Institute for Clinical and Industrial Psychology, experimental research was combined with counseling and therapy which included phenomenological elements, a practice that continued after Van Lennep's departure. [7]

Contrary to what the term "patricide" might suggest, the second generation did not discard the interpretative, phenomenological approach overnight. Linschoten's critique of his mentors in *Idolen* (Idols) was relentless, yet his psychology left room for phenomenological questions, provided they were subsequently tested experimentally. Moreover, he also remained critical of scientistic trends in the social sciences. According to him, reductionism was *also* an "idol." [57 p. 153] Kouwer did not devote himself solely to the "natural-scientific" branches of psychology either. He cautioned equally against the "danger" of positivism and reductionism as he did against the "magic" of phenomenology. Both scholars embraced the dual nature of psychology. Since its subject of study – the human being – is both object and subject, psychology had no choice but to integrate multiple methods. [58 p. 191]

Even the prominent "objectivist" De Groot called for a *multi-method approach* in his book *Methodologie* (Methodology), emphasizing the importance of theoretical and meticulous interpretative work. [62 p. 23]

Moreover, in hindsight, the Utrecht School had certain aspects in common with the later, more critical criminology, criminal law scholarship, and (forensic) psychiatry of the 1960s and 1970s. The new generation adopted Utrecht's program points and formulated more socially critical, radical versions of them. In 1955, Baan had already cautioned that an offender or patient could start acting in accordance with their diagnosis, an argument later employed by the antipsychiatry movement against the "medicalizing" approach in psychiatry. [40 p. 111] Antipsychiatry also shared with the Utrecht School an emphasis on individual development and on the experiential world of the patient, with whom their solidarity lay. On top of that, there were direct personal ties with the Utrecht School. The prominent "antipsychiatrist," Kees Trimbos, was a student of Rümke and had published with Buytendijk. Rijksens *Meningen van gedetineerden* (Opinions of Prisoners, 1958) can also be seen as a precursor to the more activist-oriented new criminology. The fact that the 1960s and 1970s saw both change and continuity is illustrated by the name of the socially critical criminological and legal movement: The "*New* Utrecht School." (The term never became widely used) [69 p. 22] The harmony model and the paternalism of the "old" Utrecht School disappeared, but what remained was the attention to the offender as a person and to their experience. Furthermore, Utrecht's focus on personal growth only intensified from the 1960s onwards. [10 p. 122,69 p. 60] Kempe wrote in 1969 that, "although the Utrecht School was dead, its core ideas remained very much alive." [71 p. 145]

In many ways, the most significant shift did not take place until the 1980s. Criminal law became increasingly punitive and repressive, and the image of the offender as a fellow human being was replaced by that of "the criminal," portrayed as an enemy of society. In psychiatry, the biography of the patient was gradually losing importance at the time. The biomedical approach became dominant, and increasing emphasis was placed on the classification of disorders based on symptoms, standardized by the increasingly influential *Diagnostic and Statistical Manual of Mental Disorders* (DSM). [45 p. 162,72 p. 90] The Utrecht philosophy had long survived in pedagogy, where Langeveld's work was continued by a number of students, including Ton Beekman, Hans Bleeker, and Karel Mulderij, who sought to make his pedagogy more accessible – yet another attempt at democratization. However, most of them left in the 1980s as a result of university reorganizations. A small number of neo-Langeveldians, along with certain academic enclaves – such as the field of historical pedagogy – persisted into the 1990s. Over time, however, it became clear that the influence of the Utrecht School was sustained more prominently in South Africa, the United States, and Japan than in the Netherlands. [6 pp. 391-393,27 pp. 146-147, 150,28 p. 102]

Continuity

Any potential direct legacy of the Utrecht School should therefore not primarily be sought within Dutch universities. Even after the movement had been diluted, transformed, and ultimately disappeared, numerous psychologists, pedagogues, educators, probation officers, lawyers, forensic psychiatrists, (child) physicians, and physiotherapists remained who had been trained "within" the Utrecht School. [27 p. 150,28 p. 102] They supervised and influenced countless students and doctoral candidates. Former students of the Utrecht School were likewise present in the social organizations where its members had long held prominent roles. In clinical practice, objectivist dogmas exerted considerably less influence. Psychologists, psychiatrists, and general practitioners are, as Van den Berg has noted, almost inherently phenomenologists, even if they no longer explicitly identify as such. [10 p. 122] Those who work regularly with patients are reminded that a person is more than their body – that the patient's lived experience must be acknowledged, and diagnosis or treatment must address the whole situation rather than merely the disorder. As Rümke wrote about the patient-as-body versus the patient-as-subject: "At the foundation of all our medical knowledge and practice, both aspects are present – unfortunately, some physicians no longer realize this. The best have always known it." [3 p. 25]

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03

Between the historical and The New Utrecht School: Initiatives to counter reductionism and fragmentation

Frank Huisman

Summary

Since the late 19th century, the academic landscape has undergone profound changes. While the "classical" university had maintained a more or less coherent ideal of science, the "scientific revolution" of the 19th and 20th centuries led to a fragmentation of the academic landscape. The gap between the "two cultures" – the natural sciences and medicine on the one hand; the humanities and social sciences on the other – was increasingly regarded as undesirable. Although the focus on the natural sciences has brought clear benefits, it has also undermined coherence, leaving the university less able than before to fulfill its societal mission. This chapter addresses a number of initiatives undertaken in Utrecht during the period between the historical and The New Utrecht School, aimed at countering the effects of reductionism and fragmentation.

Between the historical and The New Utrecht School: Initiatives to counter reductionism and fragmentation

> "Major universities are complex organisms, fostering an extraordinary variety of intellectual, scientific and cultural activity, and the significance and value of much that goes on within them cannot be restricted to a single national framework or to the present generation. They have become an important medium for conserving, understanding, extending, and handing on to subsequent generations the intellectual, scientific and artistic heritage of mankind."
>
> *– Stefan Collini, What are universities for?* [1]

In 2014, a five-part series of articles appeared in the leading medical journal *The Lancet*, generating considerable debate. [2] Under the title "Increasing value, reducing waste," concerns were raised about the extensive sums allegedly misallocated within biomedical research. The reasoned estimate of the nine authors – among them well-known clinical epidemiologists and methodologists – was that 85% of all research funding could be regarded as wasted. In the reference year 2010, this amounted to more than $200 billion worldwide. According to the researchers, this waste was the result of the way research is organized. This needed to change, and to that end they made no fewer than seventeen recommendations. One year later, an article was published which argued that the priorities of patients and clinicians regarding biomedical research were completely different to what researchers actually studied. [3] To investigate and subsequently address this "mismatch" in research priorities, the James Lind Alliance and Research Priority Setting Partnerships were established. These organizations are committed to ensuring that biomedical research better meets the needs of patients and clinicians.

How is it possible that so much research funding is spent ineffectively? How did we end up in a situation where many researchers have never met a patient who suffers from the disease they are studying, much less gained insight into their needs? [4] After all, science should serve society, and medical science should serve patients. Answers to these and other significant questions are provided by the British physician and publicist James Le Fanu. [5] In his book, *The rise and fall of modern medicine* – which is discussed in more detail below, he addresses a remarkable paradox of modern medicine. On the one hand, there has never been as much knowledge about the human body as there is today. We have never lived so

long in good health as we do now, nor have we ever spent as much money on healthcare. On the other hand, there is a certain unease among doctors and patients, and – despite all the scientific breakthroughs – we remain in the dark about the aims and the limits of medicine. This unease is reflected in concerns about rising costs and growing inequality in healthcare, in a strong preoccupation with health ("doing better, feeling worse"), a shift toward alternative and complementary practitioners, and in disillusionment and even burnout among doctors. In 2022, we could add the anti-vaccine movement to this list, which primarily viewed lockdowns and COVID-19 vaccination in terms of loss of freedom and government coercion. [6]

This sense of unease, as illustrated by these examples, is not confined to medicine and healthcare but appears to be part of a wider trend. It affects the orientation of modern science, the organization of the university, and the position of both in society. [7] The university was originally founded to serve social purposes. Just as education shaped the intellectual and administrative elite of the future, research produced useful knowledge. The "classical" university was primarily an educational institution. It emerged in the late Middle Ages and had four faculties. One of these was the Propaedeutic Faculty, which focused on general education and was completed by all students. The other three faculties – theology, law and medicine – prepared students for roles in the Church, the secular government or the healthcare sector. As everyone had received the same preparatory education, all academics shared the same intellectual culture. This changed profoundly in the mid-19th century, [8] with the emergence of a natural-scientific orientation that appeared highly promising. A new type of secondary education was introduced, in which Greek and Latin were no longer taught (the HBS: Hogere Burger School/Higher Civic School), and a new type of university emerged. In the Netherlands, this was formalized by the Higher Education Act of 1876. Latin was abolished as the language of instruction, while research became one of the central academic tasks. The primary purpose of that research was to serve useful social purposes. [9] This led to the establishment of special research institutes and laboratories, particularly for the natural sciences and medicine. Physics, chemistry, pharmacy, and physiology developed into independent disciplines, each with its own distinct field of work. Looking back, one might argue that the 1876 Act signaled a shift from scholarship to science. By the end of the century, the contours of a new university landscape were taking shape, in which a distinction had emerged between the natural sciences and medicine on the one hand, and the human and social sciences on the other. In the 20th century – especially after the Second World War – this trend of specialization accelerated even further. [10]

The benefits of specialization and the division of labor in education and research came at a cost: the erosion of a shared intellectual culture. Over the course of the 20th century, the differences between the natural sciences and the human sciences became increasingly visible. These differences concerned not only the methods used (broadly speaking: the analytical versus the synthetic method), but also the way in which the research object was defined (in a reductionist or holistic manner). After the Second World War, the differences between "the two cultures" deepened further, and the distinction between them even developed into a hierarchy. The natural sciences were expected to contribute to national prosperity and security. As a result, they enjoyed greater societal esteem than the human sciences and received substantially more generous public funding. Although, since the late 19th century, there have always been people who regretted the decline of the old ideal of general academic education, those voices remained a minority. The prevailing sentiment was that science and natural science would bring prosperity, security, well-being, and ultimately progress. In the post-World War II period, this began to change. F.J. Buytendijk, physiologist and psychologist and leading figure of the historical Utrecht School, saw the classical university evolving into a kind of company, primarily focused "on specialized empirical research, which can only be carried out in a 'team,' with problem development almost analogous to the production plan of an industrial enterprise." [11] In wider circles, there was growing concern about the outcomes generated by scientific research. It gradually became apparent that, although the atomic bomb had ended the war, it would forever pose a threat to peace; that automation had improved business efficiency while simultaneously causing unemployment; and that industrialization had generated wealth, yet also environmental pollution. The human sciences, thus, remained essential for achieving "the good life." [12]

The university is never a finished institution. Since its founding, it has been in constant flux. It has always adapted to societal needs and, in the process, shaped visions and ideals of science to align with them. [13] This process is now unfolding once more. Over the past several years, Utrecht University has been engaged in efforts to shape a new conception of humanity and the world and, by extension, a new ideal of science. In today's highly democratized society, the need for critical reflection on and reform of science is greater than ever. The world is watching and members of the public are demanding accountability from science as never before. Until now, the debate between the two cultures has largely been an academic issue. With the rise of social media, however, public engagement with the university has intensified – though not always for the better. Recent events have shown that scientists do not always feel at liberty to express their views, as they face threats from members of the public who disagree with their findings. [14] Significant mistrust, alienation, and polarization persist with respect to topics such as vaccination and climate change. All the more reason, then, for a brief reflection on the developments in science and society over the past half-century, and the responses to these developments (in Utrecht). The following chapters discuss a number of specific activities of The New Utrecht School, an initiative of the University Medical Center Utrecht, HKU University of Arts Utrecht, and Utrecht University. [15] In this chapter, I build on Marieke Drost's work and discuss earlier initiatives – both in Utrecht and elsewhere in the Netherlands – that also sought to counteract reductionism and fragmentation, in medicine as well as in the broader scientific domain. Although the historical Utrecht School may have died a quiet death, the critique of

the scientistic habitus and method has always remained very much alive. Although many of my examples are drawn from medicine, they are intended to illustrate trends in science as a whole.

Post-war developments

The world as it existed before the Second World War is now a distant memory. Few can still imagine a country in which people succumbed on a large scale to infectious diseases, or where children suffered the lifelong consequences of polio. Parkinson's disease was untreatable, and the same was true for various serious psychiatric disorders. Open-heart surgeries, organ transplants, IVF treatments, and genetic modification were completely unimaginable and, at best, belonged to the realm of science fiction. All of this – and much more – is possible today, and yet it is accompanied by persistent worry and discomfort. How is that possible? In this chapter, I argue that post-war healthcare has not only witnessed remarkable breakthroughs but has also become increasingly fragmented. Research has become increasingly reductionist and specialized, at times straining the integration between laboratory and clinic and the optimal relationship between physician and patient. Research has also become more international, capital-intensive and competitive. In addition, expansion of scale and the adoption of business models have transformed the nature of science. Where did this fragmentation originate?

Post-war developments in medicine have received little scholarly attention. [16] This is partly due to a lack of historical distance, which prevents us from reaching a measured judgment. More importantly, however, scientific developments proceeded rapidly and along multiple directions. After the war, there was a tremendous research ethos. The United States had assumed the leadership role previously held by Germany, which had emerged as an industrial and scientific superpower since the mid-19th century. The report commissioned by President Roosevelt *Science, the endless frontier* served a guiding role in American science policy. [17] In that report – which would become the blueprint for post-war science and technology policy – the federal government was called upon to make substantial investments in fundamental scientific research, as an absolute prerequisite for (national) progress. The term "science" referred to the natural sciences and medicine, not the social sciences or humanities. The national objectives to be pursued were economic growth, robust public health, and a strong defense infrastructure. These goals were to be achieved under the direction of the National Science Foundation and the National Institutes of Health, supported by substantial federal funding.

The enormous post-war investments in fundamental research paid off, particularly in the field of medicine. The development of penicillin during the war inspired great confidence in the potential of scientific research. The introduction of antibiotics, cortisone, streptomycin, chlorpromazine and other drugs after the war produced impressive therapeutic results, greatly enhancing the reputation of science. The artificial kidney made dialysis possible, the iron lung offered new opportunities for patients with polio, and incubators increased the survival chances of premature babies. Organ transplantation was within reach. The microbiologist and Nobel laureate Macfarlane Burnet expressed the post-war optimism about progress in the following way: "One can think of the middle of the twentieth century as the end of one of the most important social revolutions in history, the virtual elimination of infectious diseases as a significant factor in social life." [18] Other breakthroughs included insights into the etiology of lung cancer, open heart surgery, the development of a polio vaccine, the development of the contraceptive pill, kidney transplants, bypass surgery, heart transplants, prenatal diagnostics (for Down syndrome), and the development of the CAT scanner. Together, they contributed to longer and healthier lives. The three decades following the war were aptly referred to by Le Fanu as the "Golden Age of Medicine," when it seemed that the numerous plagues that had historically afflicted humanity had finally been overcome. In a "lengthy prologue" spanning 190 pages, Le Fanu offers vivid accounts of twelve pivotal moments in the history of modern medicine, which together brought about a true therapeutic revolution.

The rest of his book is devoted to an analysis of the "rise and fall" of modern medicine. The therapeutic breakthroughs gave rise to growing optimism about progress. Modern science seemed capable of offering solutions to virtually every problem, as they were approached systematically and analytically. Le Fanu, however, argued that this perception was misguided: Despite the remarkable nature of these breakthroughs, they lacked direction and coherence. In fact, there was no coherent research agenda being pursued in a systematic manner. Discoveries often depended on luck and serendipity, while innovations were achieved in an isolated manner. [19] This aspect went largely unnoticed, causing the breakthroughs to create a distorted – and worse: overly inflated – expectation of science. Research gradually became detached from clinical practice, becoming an end in itself. "Achievement in science became more important than advancement in health care," Le Fanu writes. While research and clinical practice were once closely linked, conducting research had now become a distinct career path. This change is evident in the awarding patterns of Nobel Prize in Physiology or Medicine. [20] Over the course of the 20th century, the highest honor for a medical discovery was progressively awarded for advances in fundamental biomedical knowledge, rather than for clinical breakthroughs. Moreover, biomedical research became increasingly reductionist, delving ever deeper into the human body: from diseases to organs, to cells, molecules, and ultimately the sub-molecular level. In Le Fanu's words: "The best interests of the patient as a human being became secondary to the scientific scrutiny of his illness." Research into disease had become more important than seeing the person as a whole.

Between the historical and The New Utrecht School:

Modern medicine, thus, stood in stark contrast to the view of humanity and the scientific ideal upheld by the (old) Utrecht School. Foreman Buytendijk said the following about this: "The motivation behind medical thought and practice has long stemmed from compassion for human suffering but this ethos can preserve its noble form only if it is continually revitalized by a clear understanding of the nature of human beings – and, consequently, of the essence and significance of suffering. Detached from this purpose, it transforms into a technical institution, guided exclusively by its own internal logic and development." [21] In 1953, Buytendijk's students and colleagues published a volume on the occasion of his 65th birthday. They quoted him with approval: "The human being is not 'something' defined by certain traits, it is an initiative of relationships with a world they choose and that, in turn, chooses them." [22] According to the historical Utrecht School, humans should not be reduced to mere matter, whose properties can be examined through physical and chemical analysis, but should be seen as living beings with a will and emotions, actively interacting with their environment. A few years later, Jan Hendrik van den Berg, a psychiatrist and member of the Utrecht School, expressed a widely shared concern in a short book that stirred up a lot of controversy. In 1969, he published *Medische macht en medische ethiek* [Medical Power and Medical Ethics]. It went through no fewer than eleven reprints and was translated into English in that same year. [23] According to Van den Berg, medicine had changed drastically in nature over the course of the 20th century. 19th-century physicians could not perform major surgery, knew nothing about bacteria, were unaware of vitamins and hormones, did not understand the function of most organs, and had no effective medication at their disposal. Still, they were capable of many things: "The old physician was a skilled doctor. What that means is clear to anyone who has seen a patient cling to their doctor in desperation, at a moment when there is nothing more the doctor can do. The power that this doctor then displays – the power to comfort, to ease pain and fear – was a power doctors once truly possessed. The modern doctor dismissed that old power as less effective." [24] In a single generation, that old, comforting power had vanished. It was replaced by therapeutic power that gave rise to new dilemmas that left the doctor perplexed. Van den Berg raised the question of how to handle this newly acquired power, that could potentially prolong life indefinitely, yet not necessarily make it more meaningful.

While Le Fanu observes a current mismatch between the laboratory and the clinic, Van den Berg argues that something has been lost in the doctor-patient relationship. In light of all the scientific progress, this represents a striking paradox. The New Utrecht School aims to "address the social and scientific challenges of the future" by encouraging critical reflection on the following themes: the institutional setting of science, interdisciplinarity, education, research, and – last but not least – the public and the patient. Initiatives had already been developed in all these areas. Together, they provide a foundation upon which The New Utrecht School can build. In the rest of this chapter, I will review them one by one.

Institutional setting of science: UMC Utrecht

The New Utrecht School is interested, among other things, in the institutional setting in which science takes shape. That is why – by way of example – we would like to focus on one of the participating institutes of The New Utrecht School: UMC Utrecht. We are so familiar with the UMC that we often forget that, as an organizational principle, it is still relatively new. UMC Utrecht was founded in 2000 when education, research and patient care were brought together under one roof. [25] This was by no means a foregone conclusion: a combination of financial necessity and substantive conviction made it happen. The three pillars that currently make up UMC Utrecht have very different histories. While institutional patient care had mainly taken place in almshouses and hospices since the late Middle Ages, (inspired by the Christian *caritas*/charity ideal), medical education in the early modern period was organized partly by craft guilds (of surgeons, who practiced surgery) and partly by the medical faculty of universities (*doctores medicinae*, responsible for internal medicine). It was not until the late 19th century that research also became part of the academic responsibilities. Prior to this, it had mainly depended on occasional private initiatives. From the late 18th century onwards, it was organized within learned societies, such as the Provinciaal Utrechts Genootschap van Kunsten en Wetenschappen (Provincial Utrecht Society of Arts and Sciences, founded in 1773) or the local branch of the Genootschap ter Bevordering van de Natuur-, Genees- en Heelkunde (Society for the Promotion of Natural Sciences, Medicine, and Surgery, founded in 1790). Once research started to take shape, thanks to the efforts of individuals such as Alexander Suerman, Gerrit Jan Mulder, Pieter Harting, Franciscus Donders and Emile von Baumhauer, it gained significant momentum. The "Generation of 1840" embraced a positivist ideal of knowledge rooted in chemistry, microscopy, and experimental physiology and new laboratories arose in all of these fields. In the last quarter of the 19th century, this "natural science shift" in medicine led to the establishment of new chairs and the division of existing ones. Gradually, a gap emerged between preclinical and clinical domains, separating fundamental biomedical research from medical education and patient care. This development coincided with a broader trend toward specialization. [26]

The danger of differentiation and fragmentation was recognized early on, but it was considered as a price to be paid for scientific progress. Albert Abraham Hijmans van den Bergh, for example, believed that breakthroughs in medical science had led to an overemphasis on curative, somatic medicine, resulting in the neglect of the patient as a person. [27] The growth of experimental science had led to a divide between the clinic and the laboratory and between the sick person (a concrete individual) and the disease (as an abstraction). In his farewell lecture (1938), he therefore appealed against the compartmentalization and fragmentation of medicine. [28] Although he recognized that specialization – as a result of increased medical knowledge – was inevitable, he also saw its downside. Those who over-analyze risk losing sight of the synthesis; those who become intoxicated by "the naive materialism of the late 19th century" fail to see that the individual

is essentially indivisible. That was exactly the meaning the word – derived from the Latin *in* (not) and *dividuum* (divisible) – was meant to convey.

Despite these and similar warnings, specialization in medicine continued, and even accelerated after the war. The Netherlands became strongly oriented toward the United States, with many Dutch physicians traveling there for study trips. Scientific and technological breakthroughs led to the emergence of new areas of research, new medical specialties, and the opening of new hospital departments. There seemed to be no end to medical and technological innovation, which, however, also had a significant cost-driving effect. The "Golden Age of Medicine" saw healthcare spending more than double, from 3% of GDP in 1953 to 7% in 1972 (and then rising further to 14% in 2018). After the war, the national government was compelled to take a far stronger role in healthcare than before, while revenues from the Groningen gas fields supported the expansion of the welfare state. Over time, these trends continued, and (super)specialization in medicine brought not only health gains but also increased fragmentation and escalating costs.

From the 1970s onwards, medical faculties were also confronted with a sharp increase in student enrollment and growing administrative friction between the faculty and the hospital. As academic research and education became increasingly unaffordable and difficult to manage, attention turned to the development of a new form of governance. [29] Since its founding in 1636, patient care, medical education, and medical research had developed separately from each other, and it was evident that more coherence was needed. The establishment of University Medical Centers (UMCs) in the Netherlands toward the end of the 20th century was intended to foster collaboration between education, research and patient care, while also controlling costs. It would, however, take another thirty years before – under the pressure of economic depression and a drive for budget cuts [30] – a decision was made to merge the Faculty of Medical Sciences, the Utrecht Academic Hospital, and the Wilhelmina Children's Hospital, in the hope that the whole would be greater than the sum of its parts. On January 1, 2000, the newly merged institute opened at the Uithof under the name UMC Utrecht. Geert Blijham, then chairman of the Board of Directors, described the new strategic direction as follows: "Key ideas included the further concentration of research and patient care, a greater emphasis on collaboration with other institutions, the introduction of a new educational curriculum and the strengthening of entrepreneurship." [31]

Interdisciplinarity: Antidote to compartmentalization

Interdisciplinarity and interfaculty collaboration are of paramount importance to The New Utrecht School. To achieve this, UMC Utrecht, HKU, and UU collaborate closely across various domains. These include the Graduate School of Life Sciences, the Master's program in Medical Humanities, the broad Zorg, Gezondheid en Samenleving (Care, Health, and Society, ZGS) Bachelor's program, and the public dialogues with all faculties of UU, UMC Utrecht, and HKU. Concerns regarding the compartmentalization of disciplines – which inevitably produces blind spots – are, by no means, new. As early as the late 19th century, there were concerns about the decline of the old ideal of scholarship, which traced its roots to the Middle Ages and was aimed at a broad academic education. Until deep into the 19th century, every student – as mentioned above – completed the program of the Propaedeutic or Artes Faculty: beginning with the *trivium* (grammar, rhetoric, and dialectic) followed by the *quadrivium* (arithmetic, geometry, music, and astronomy). Only after completing these studies did students choose among one of the three higher or vocational faculties. This structure of higher education guaranteed a shared intellectual culture: every academic was rooted in the same intellectual tradition and spoke the same language (even literally: Latin). [32]

This situation came to an end in the last quarter of the 19th century with the establishment of the HBS (1863) and the Higher Education Act (1876), which laid the foundations for the modern university. From then on, less emphasis was placed on broad academic education (*Bildung*), and greater importance was given to practical preparation for the labor market, which demanded professionally trained specialists. [33] In order to serve society optimally, science was divided into disciplines and faculties, where – for the first time – research was also conducted. Consequently, the university evolved from an institution solely dedicated to knowledge transfer to a place where new knowledge was produced. Over the course of the twentieth century, academic cultures drifted so far apart that many believed it was counterproductive for society. In 1959, C.P. Snow published his influential pamphlet, *The Two Cultures and the Scientific Revolution*, in which he warned that *science* (the natural sciences and medical sciences) and the *humanities* had developed into two completely separate worlds. [34] He argued that this division within Western intellectual circles was obstructing the search for solutions to the world's pressing problems. His appeal – to ensure comprehensive training in both science as well as humanities – was later realized through the creation of a new type of educational institution: the University College, with Utrecht hosting the first in the Netherlands. University College Utrecht was founded in 1998 with the aim of offering a broad Bachelor's program in *Liberal Arts and Sciences*. [35] University College Utrecht follows the Anglo-Saxon model, in which education is organized in a college structure similar to that found at Oxford and Cambridge. A *college* is a small-scale, interdisciplinary learning environment in which students can develop broadly before choosing a more discipline-oriented follow-up program or job. In a university college, students with diverse cultural backgrounds and different (disciplinary) interests live and work together. In consultation with a mentor, a tailor-made curriculum is put together that meets the individual needs of the student.

A few years later, the Descartes Centre for the History and Philosophy of the Sciences and the Humanities was established. The founder and first director, Wijnand Mijnhardt, succeeded in persuading the rector magnificus at the time, Willem Hendrik Gispen, to

support a new interdisciplinary knowledge ideal that would be endorsed by all Utrecht University faculties. Together, they found all faculty boards at Utrecht University willing to participate in this globally unique initiative. [36] The Descartes Centre aims to contribute to social and political debates by critically reflecting on the foundations and dissemination of scientific knowledge, and the role that rhetoric plays in this process. Science increasingly shapes how politicians, administrators and citizens understand the world. Reflection on science, in both historical and philosophical terms, was therefore considered to be of great importance to today's world because it examines how knowledge is produced, a process that involves the ongoing contest between competing scientific perspectives and claims. The Descartes Centre provides education through its Research Master's program in History and Philosophy of Science. [37] The students in the Research Master's program come from a wide range of backgrounds, including the humanities, social sciences, natural sciences and biomedical sciences. In addition, members of the Descartes Centre conduct interdisciplinary research on a wide range of topics including (the history of) evidence-based medicine, the diversity of our livestock, medical research ethics, colonial alkaloid production, zoonotic diseases, defense research during the Cold War, the morphine debate, alternatives to animal experimentation, and the organization and financing of the Dutch healthcare system. [38] The dissertations produced at the Descartes Centre often address relevant social issues and are regularly picked up by the media, thereby contributing to the public debate on science. The Descartes Centre has recently taken on a significant role in offering research integrity education, which has become a mandatory part of the program for all doctoral students at UU. All of this is based on the conviction that students should not only be familiar with the traditional knowledge of their own discipline, but also learn to reflect on its history and foundations, and should be aware of (the value of) other disciplines. Only then will they be able to fully fulfill their social responsibility as academics.

Education: From fragmentation to integration

Specialization and fragmentation in the medical sciences also had a profound impact on the medical curriculum. This is hardly surprising: over the course of the 20th century, the field of medicine underwent increasing differentiation into sub-specialties and super-specialties. Biomedical research delved ever deeper into the secrets of the human body and its diseases. An independent knowledge base developed around each organ and each disease (and sometimes even around the use of specific instruments). [39] Successful specialist researchers were promoted to professor, who were then assigned a teaching role. Each professor wanted their area of expertise to be included in the medical curriculum, which consequently became increasingly extensive. In addition, the educational programs often lacked practical relevance, confirming the concerns that Hemans van den Bergh had already expressed in 1938: more analysis than synthesis, less coherence in the curriculum, and less attention to the person who is the patient.

After the war, the number of specialties and specialists increased exponentially, while generalists (later called general practitioner) became increasingly marginalized. This resulted not only in progressively less attention to "the person as a whole," but also had a cost-driving effect on the healthcare system. The trend was evident throughout Western medicine. In response, McMaster University in Canada developed a new teaching method: problem-based learning. In designing the (basic) curriculum, the focus was shifted away from the body of available medical knowledge and placed instead on the problems typically encountered by the average general practitioner in daily practice. These problems would then need to be approached in an interdisciplinary manner, so that all dimensions of the disease (both biomedical and psychosocial) could be addressed. Specialist training was subsequently made available for those who wished to explore a particular organ or disease in greater depth. In other words, medical education should no longer be teacher-centered but student-centered, and should no longer be informed by theory but by practice.

Images: The "Bewezen Beter (Proven Better) Conference: on evidence-based medicine between craftsmanship and science," organized by the Descartes Centre in collaboration with Studium Generale, on 24 September 2009 at the Geertekerk in Utrecht (photos by Wieke Eefting).

In the Netherlands, problem-based learning (PBL) was first embraced by the new medical program in Maastricht. [40] The program, launched in 1974, aimed to provide a response to the challenges faced by modern healthcare. To this end, a new type of doctor would have to be trained. In Maastricht, there would be – much more than elsewhere – an emphasis on the social aspects of healthcare, on the behavioral sciences, and on general practice. Although the new faculty encountered skepticism and resistance from other medical faculties, it had the political tide in its favor. In the 1974 *Structuurnota gezondheidszorg* (Healthcare Structure Memorandum), State Secretary Hendriks advocated a shift in emphasis in healthcare from specialist, curative inpatient care to preventive and outpatient care. The policy document attributed an important role to the general practitioner and to primary care in general. The Maastricht Medical Faculty was given the green light and became a

success. [41] In the decades that followed, the "Maastricht experiment" would grow into a fully-fledged university. [42]

Another two decades passed before Utrecht also embraced radical educational reforms. [43] Utrecht had always performed well in education reviews. However, the 1997 assessment of the education they provided was particularly damning. The medical program in Utrecht was described by the education review committee as "old-fashioned, theoretical, and unchallenging." Geert Blijham, appointed chairman of the Board of Directors in 1998, wanted to fast-track a new curriculum, which was implemented quickly – even before the formal establishment of the UMC. Olle ten Cate was appointed professor of medical education, and in 1999 a patient-oriented curriculum was launched, replacing the old discipline-oriented curriculum. In the new Utrecht Curriculum of 1999 (CRU'99), traditional core subjects such as anatomy, physiology and pathology were integrated into themes such as circulation, metabolism and development. Teaching became small-scaled, more student-centered and problem-based. [44]

The next educational reform went even further. In CRU2006, the curriculum was designed with the patient as its central focus, resulting in the incorporation of the humanities into the curriculum. In 2002, a professor of medical ethics was appointed, followed by a professor of medical history in 2006. Together with a health lawyer, a general practitioner, a psychologist/lawyer, an ethicist, and a sociologist, they formed a development team that created a mandatory eight-week module for the third year of the medical curriculum. [45] The resulting bachelor program module, Medical Humanities, offers interdisciplinary reflection on important themes in modern healthcare. [46] From an ethical, legal, historical, scientific-philosophical, and literary perspective, attention is paid to themes such as medical-scientific research involving humans, the role of medical technology, issues of scarcity in the system, prevention, medical decisions concerning the beginning and end of life, and the (changing) doctor/patient relationship. The module turned out to meet a need. It consistently receives positive feedback from students, and the 2012 education review committee commended the broad academic education it provides. The committee even designated the module as a "best practice," setting an example for other medical faculties. Inspired in part by this success, the Medical Humanities sub-department was established at the Julius Center of UMC Utrecht shortly thereafter, and an interfaculty minor in Medical Humanities was launched in 2021: a partnership between UMC Utrecht and the Faculty of Humanities at Utrecht University. As of September 2022, Utrecht University offers the inter-faculty Master's in Medical Humanities (discussed in more detail in the final section of this collection). [47] All these developments are well aligned with the requirements of the *Raamplan Artsopleiding 2020* (Framework for Medical Training), which stipulates that graduate doctors must have an understanding of the philosophical, ethical, and historical foundations of medical practice. [48]

Research: From researcher-driven to society-driven

As previously mentioned, the university was originally founded to serve social purposes. Just as education shaped the intellectual and administrative elite of the future, research produced useful knowledge. To what extent does the university still succeed in fulfilling this societal mission? According to people like Le Fanu and others, not very well – or even not at all. [49] Le Fanu argues that scientific research is increasingly becoming an end in itself, serving as a career goal. According to him, the 1970s marked a turning point. That was when the "Golden Age of Medicine" gave way to *The era of Big Science*. Science became international, capital-intensive, and competitive, with expansion and commercialization shaping the nature of "the scientific enterprise." [50] This created a situation in which scientific discovery was valued more highly than contributions to healthcare practice. Readings observes a similar trend. He signals a transition from the Humboldtian university – characterized by *Lehr- und Lernfreiheit* (freedom to teach and learn) within a national context – to a university that performs on the international stage, where administrators rather than professors hold sway, and where excellence, accountability and human resources are the most important *governance* principles. The Enlightenment project – with Kant and Von Humboldt as its intellectual beacons – has come to a definitive end. According to Readings, the university transformed into a bureaucratically organized, consumer-oriented corporation. Ravetz observes a shift from academic to industrial science around 1970, while Münch argues that the neoliberal "New Public Management" has undermined the ideals of the classical university. Unschuld even proclaims the end of classical medicine as a result of economization in our approach to health and illness.

Although public confidence in science remains high to this day, the university system is under immense pressure. The "output" of students, doctoral candidates, and publications is higher than ever, yet there remains little sense of a shared mission. The new "incentives and rewards" have fueled competition – among students, scientists, universities, and even countries – and there is a widespread feeling that the mechanisms of peer review and intellectual competition have degenerated, resulting in a rat race from which there is no escape. The well-known maxim "publish or perish" has increasingly produced harmful consequences, ranging from burnout to scientific misconduct. [51] The prestigious magazine *Nature* even concluded that "many fields of science now resemble war zones." [52] In 2013 – the same year in which *The Economist* published a cover article with the title "How science goes wrong" [53] – *Science in Transition* was founded. A reform movement funded by the Descartes Centre, which not only analyzed the systemic flaws but also made suggestions for reforming the academic system. [54] The initiators noted that there is considerable dissatisfaction with the functioning of science, university education, the measurement of results, cooperation with society and the business community, and the role of science in political decision-making. In their position paper, they broke down the complex system into seven themes: the public image of science; social trust in science; the quality of science; reliability and corruption; communication; democratic decision-making; and academic

education. Recommendations were made to optimally address these issues. For instance, the public should be made aware of the inherently uncertain nature of science to foster more realistic expectations. Additionally, new criteria should be developed to assess the value of scientific results, and all stakeholders should be involved in setting priorities and evaluating research. Trust in science can be strengthened by clarifying that research is not solely concerned with "truth," but also involves normative goals and judgments. Political debates can therefore rarely be settled by science alone. For this reason, it is of great importance that the public has insight into the way scientific decisions on societal issues are made: as the agenda of science is, after all, a matter for society.

In short, the initiators of *Science in Transition* recognized the need for new *checks and balances* within the scientific system. Their analysis was widely shared, although there was also some resistance to the recommendations that were made, particularly among university administrators. Nevertheless, the movement sparked a broad societal debate, which – albeit gradually – also prompted change. The NWO formulated a new policy on scientific integrity. ZonMW commissioned research into "system failure," and a new Standard Evaluation Protocol was introduced, in which productivity was no longer considered a quality criterion. The VSNU signed the San Francisco Declaration on Research Assessment. Leiden's CWTS conducted research into the influence of impact factors at Dutch UMC's. The European Commission embraced Science in Transition and the Minister of Education, Culture and Science presented a new vision for science. A National Science Agenda was created, to which citizens could submit questions and the report *Erkennen en waarderen* (Recognition and Rewards) was presented. Last but not least, the Graduate School of Life Sciences at Utrecht University offered a PhD course titled "This Thing Called Science," designed to provide (bio)medical doctoral candidates with a deeper understanding of all dimensions of the scientific world. [55] *Science in Transition* played an important role in all these initiatives, and there was also movement at the administrative level in Utrecht. As part of its efforts to make science more transparent and relevant to society, the Executive Board is currently focusing on open science. With that goal in mind, financial support was provided for a new magazine: the *Journal of Trial and Error*. [56]

The public and the patient: Connecting worlds

"Medicine is too important to be left to doctors... Medical treatment does not take place in isolation and is not an end in itself," said cardiologist Arend Jan Dunning. [57] Along similar lines, British medical historian Roy Porter noted: "Medicine is an enormous achievement, but what it will achieve practically for humanity, and what those who hold the power will allow it to do, remain open questions… Medicine will have to define its limits even as it extends its capacities." [58] In our secular age, people are left to their own devices. Although scientific breakthroughs have made life seem infinitely malleable and flexible, there are (still) limits. Those limits are both existential and financial in nature, and must be formulated and respected by all parties involved – doctors and patients, policymakers and insurers alike.

In 2020, he Executive Board of UMC Utrecht presented its strategic program for the period up to 2025, entitled *Connecting Worlds: Because Every Person Counts*. [59] The title of the strategic program articulates the ambition to connect the many separate worlds: linking research to education and patient care, preventive measures to curative intervention, academic to regional hospitals, primary care to "higher" levels of care, and top-down to bottom-up initiatives. The preamble to the program expresses this ambition as follows: "We believe in bringing together the worlds that are still often separate. We connect the worlds of hospitals, general practitioners, and other healthcare providers. We connect worlds to create an environment in which patients, colleagues, and students are seen and heard. Because every person counts." The "Utrecht approach" is defined by its multi- and interdisciplinary character. It also places strong emphasis on prevention and patient input when setting priorities. From now on, science and healthcare must take shape according to a process of "co-creation" and "co-evolution."

Connecting worlds appears to build on the patient participation program that was launched in 2018. [60] Three years after the launch, the Board of Directors decided to establish a Transmural Coordination Center (TCC). Both the provision of care and regional collaboration had become too fragmented, creating a need for transmural cooperation. The aim is to create a "healthcare innovation agenda" with regional general practitioner organizations that is in line with *Connecting Worlds*. To this end, so-called testing grounds are being set up to ensure cooperation in the fields of education, research, and patient care, under the motto "de Juiste Zorg op de Juiste Plek" (the Right Care in the Right Place). Efforts have begun to build and strengthen connections with primary care providers, while engagement with regional hospitals will follow at a later stage. The intention is to develop a coordinated healthcare network, with close collaboration across all levels of care to serve the patient effectively. [61]

Only time will tell whether *Connecting Worlds* will achieve the expectations placed upon it: that science – across all disciplines – will better address the needs of society. Some feared that it would remain nothing more than fancy words in glossy reports. However, the pandemic that has affected the world since 2019 has further underscored the urgency of this ambition. During this crisis, biomedical science has shown itself at its best. The genetic code of the virus was deciphered early on, enabling the development of multiple vaccines in record time and protecting many people against the new virus. However, it soon became apparent that there was also mistrust and resistance toward both science and the government, as well as significant global inequality in the distribution of the vaccine. [62] Why do people resist a vaccine that could save their lives? Why is there so much distrust toward the government? Why is there so much mutual misunderstanding? In order to understand society's response to the virus and the vaccine, the human sciences are indispensable. Bernice Hausman says the following about this: "The humanities and their characteristic hermeneutic approach offer insights unavailable to scientific reasoning.

In medical education, narrative medicine and the health humanities have responded to a felt need for more human-centered approaches to healing after the technological advancements of the last half century." [63] COVID-19 has prompted a wealth of writing and given rise to a wide range of perspectives. [64] Reflecting on the way we live is not a luxury but a necessity, and the most effective way to achieve this is by bridging the gap between the two academic cultures. [65] The contributions that follow in this chapter provide a sample of the initiatives undertaken by The New Utrecht School to this end.

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04

Vignette: The Wilhelmina Children's Hospital: Fertile ground for the ideas of the Utrecht School

Marieke Drost

The Wilhelmina Children's Hospital: Fertile ground for the ideas of the Utrecht School

Around the 1970s, the Utrecht School lost ground as an academic movement. Yet, here and there, members of the school had sparked ideas, planted seeds, or inspired individuals who later, at the right time and place, further developed the "Utrecht" patient-centered approach. One such place was the Wilhelmina Children's Hospital (WKZ) in Utrecht at the end of the 1970s and the beginning of the 1980s, particularly in the departments of immunology and rheumatology.

There, immunologist Wietse Kuis and physiotherapists Paul Helders and Janjaap Van der Net experimented with new treatments for children with joint disorders. Thanks to new medications, children with rheumatism were no longer confined to their beds and wheelchairs gradually disappeared from the waiting rooms. Van der Net recalls this period of transition: "the children experienced less pain and stiffness, which made other, movement-focused treatments possible." Old frameworks began to shift, and practitioners sought new examples and sources of inspiration. One of them was M.J. (Martien) Langeveld, the renowned Utrecht School pedagogue. At the invitation of Wietse Kuis, he spent a year observing at the clinic for children with joint disorders.

Kuis had come into contact with the ideas of the Utrecht School in the 1960s. During his medical studies, he attended extracurricular lectures by the renowned psychiatrist H.C. Rümke, one of the leading figures of the movement. Kuis was inspired by Rümke, who advocated for an empathetic, person-centered approach to psychiatry. As medical-technical thinking increasingly came to dominate the field, Kuis' fascination remained, yet over the years the influence of these ideas slowly faded.

Something similar happened in physical therapy. During their training, Van der Net and Helders still read works by the physiologist Frits Buytendijk, another prominent figure of the Utrecht School. His person-centered approach was soon overshadowed, however, by the more quantitative movement sciences.

When Kuis later, in his role as an immunologist at the WKZ, happened to hear that Langeveld (who was in his seventies by then) was still alive, he saw a final opportunity to engage directly with the ideas of the Utrecht School. Langeveld was receptive to his invitation. For a year, he sat in on consultations alongside Helders and Kuis, sharing his observations with them and with the broader team, which also included Van der Net. In this way, they saw how the core principles of the Utrecht School – viewing the patient impartially as a *person*, and considering their lifeworld – were applied concretely and practically by Langeveld.

The clinic saw many children with unexplained complaints, which suited Langeveld's approach perfectly. Kuis recalls a girl with joint complaints who came to the clinic with her mother. While the mother was very neatly dressed, the daughter was not. Langeveld did not initially inquire about the physical symptoms; instead, he asked about their relationship and advised the mother to pay more attention to her daughter. Kuis was "flabbergasted". He had seen no signs of any issue between mother and daughter, yet Langeveld's insight proved spot on. The mother was in tears, and by the following consultation, the daughter's joint complaints had vanished. Kuis: "Langeveld saw the *pattern*".

It was Langeveld's sharp perception that stayed with Helders, Kuis, and Van der Net above all else. He could *see* what children reveal about their lifeworld, through words and movement. Paying attention to that lived experience is essential, especially in cases where, as Helders puts it, you initially "have no idea what's going on." On one occasion, a couple brought their perfectly healthy 11-month-old son to his consultation. The child was developing well, except that he simply would not sit. It soon became clear that this was not a developmental delay. The family lived on a boat, and in that rocking world, the little boy was smart enough to wait a little longer before sitting down until he could keep his balance well enough. Helders would never have found out had he not asked about their home situation.

Helders realized that this was precisely what Buytendijk meant when he wrote that a child's motor language is shaped by interaction with its environment. Seen from this angle, Helders' work gained even more significance. "Once you start to grasp the language children use to tell you something, your approach becomes much more meaningful than when you're simply chasing after medical symptoms. That's when a child's world becomes truly fascinating." Helders considers himself fortunate to have met people like Langeveld and to have had the opportunity to explore alternative approaches. At the time, it was perfectly normal for him to spend thirty minutes with a child – setting aside disease categories and diagnostic checklists, and simply listening with an open mind. It sounds time-consuming, but it can actually save time, Kuis explains. On one occasion, a fourteen-year-old girl visited his clinic, reporting that she had been tired for as long as she could remember. She had already been to see all kinds of specialists, and Kuis and his colleagues had received a thick stack of files from them. They decided not to read it right away, but to first listen to the girl's life story instead. In that story, they found a reason to look for a physical cause. And indeed, it was found that the girl had an abnormality of the pulmonary vessels. Kuis believes that if they had not taken half an hour to listen to her, they would probably have thought of chronic fatigue syndrome first, a condition that was receiving considerable attention at the time.

Kuis said: "a purely diagnostic view only considers information that fits into a medical picture. However, the patient represents a whole world – a relevant one. The key is to avoid asking too many specific questions too quickly. This is clearly not an appropriate approach for conditions such as meningitis. In many cases, however, the symptoms are not so clear-cut. Even rheumatism can present differently in different children, so you should not just focus solely on the joints straight away."

Open-ended questions can also prevent unintentionally teaching a child a specific vocabulary, says Van der Net. "If you keep asking: *'are you in pain?',* then 'pain' becomes the code. Then you should not be surprised if the child starts focusing mainly on pain from then on. It is better to ask: 'how are you?'" Another thing that stuck with him about Langeveld's approach was his use of metaphors. Langeveld would sometimes name children after fairy-tale characters: "you are a Sleeping Beauty or a Cinderella." Van der Net: "These characters are templates of human behavior, and they can help children to understand something. If I refer to a child as 'the princess on the pea,' and the child accepts this, then you establish *common ground* to ask: 'what exactly is that pea?'"

Van der Net suspects that it is no coincidence that the Utrecht School's strong focus on the individual patient's lifeworld was particularly well received in pediatrics. After all, that lifeworld is often present in the treatment room, as the parents accompany the child to the consultation. The Utrecht School's emphasis on interdisciplinary and interprofessional collaboration also suited the WKZ, where behavioral scientists and doctors met weekly. Just as these practitioners were exploring new directions and building a network of inspiring examples, Langeveld crossed their path. His infusion of "Utrecht" thinking found fertile ground.

In recent decades, however, Kuis, Helders, and Van der Net observed how that school of thought gradually lost its footing. Helders: "medicine has become a market, and consultations have been standardized. This has further eroded 'broad-minded' thinking and practice. Medicine turned into a box-ticking exercise. Frankly, it is almost laughable that everyone keeps insisting the patient comes first. If you need to say it out loud, it clearly has not sunk in."

Fortunately, there is always a counter-current that arises against this trend. Helders sees a parallel between the historical Utrecht School – the group at the Wilhelmina Children's Hospital (WKZ) – and The New Utrecht School: "people with the same interests and passion find each other, time and again."

05

The value of interdisciplinary (legal) education in a changing world

Bald de Vries

The value of interdisciplinary (legal) education in a changing world

A spade in the field[1]

About a century ago, in the mid-Twenties, my grandfather was working on the fields with his brothers, up North in the province of Friesland, when he saw in the distance his mother approaching. She had a letter from the government. It stated that he could start working as a customs officer down South, in Limburg.

The story goes that my grandfather with a certain sense of drama, broke the spade in two and left it behind in the clay of Friesland, setting off towards a new future with the bravado and curiosity characteristic of young people.

He settled in a small town near the border with Belgium. He joined the Roman Catholic Church. This enabled him to marry my grandmother, Roza Cleven. He studied taxation and rose to the position of tax inspector. In 1930, my father, René, was born, followed a few years later by my aunt José (now deceased). Meanwhile, a lot was happening in Europe. Dark clouds were gathering overhead – the clouds of fascism and the threat of violence and war.

Integration, man, phenomenology and the Utrecht School

Something also happened at Utrecht University (UU). A scientific movement emerged that looked at the world in a different way, and above all, looked at people in a new way. Two concepts were important: integration and phenomenology. They formed the basis of what later became known as *De Utrechtse School.* [1] The development of this movement took place at the Faculty of Medicine, the Faculty of Law and the Faculty of Social Sciences, with Frits Buytendijk, Willem Pompe and educationalist Martin Langeveld as its founders, alongside others such as judge Johanna Hudig and forensic psychiatrist Pieter Baan.

They shared the idea of integration of knowledge and a common focus on people and their dignity. Annet van Royen-Kerkhof explained it thus, in her inaugural lecture: [2]

Scientists collaborated across the boundaries of their own fields, placing the individual human being at the centre, as a counter-movement to the positivist and natural scientific view of humanity that was prevalent at the time.

1 This is an edited version of the inaugural lecture held in Utrecht on 12 March 2025.

That the individual human being is at the centre, has a phenomenological background, which can be traced to the work of Martin Heidegger, among others. [3] In short, from a phenomenological perspective, phenomena that present themselves to us are observed and studied in their entirety. As the focus at *De Utrechtse School* was on the individual human being, the phenomenological perspective is both existential and intersubjective.

It is existential because human beings are viewed as a whole, as existent: being-there, *Dasein* in Heidegger's words, [4] physically in the world and in time, interwoven with and part of an inseparable whole. The perspective is also intersubjective. After all, individual human beings are an inseparable part of a larger whole: we are both individual and social beings, and therefore mutually dependent on and connected to one-and-another: 'human existence [is] co-existence,' as Luijpen put it in 1959. [5] We want to be seen and heard.

Interdisciplinarity and The New Utrecht School

Integrative thinking is not a new concept. [6] However, the current focus on it, is. It is now labelled as interdisciplinarity. Indeed, at Utrecht University there is a renewed attention to interdisciplinary thinking in research and education. The Program Interdisciplinary Education, led by Iris van der Tuin and Joki van der Poel is but one example. It focuses on offering interdisciplinary courses, designing those courses, and supporting teachers providing them with a skill set to teach in an interdisciplinary way. As the programme comes to an end, its results will be integrated in the updated UU-educational model. Another example is the publication of the first edition, in 2022, of De Nieuwe Utrechtse School – a volume of essays, about the importance of integrating knowledge and interdisciplinary cooperation initially in the domain of health science. [7]

Interdisciplinarity is not in itself a means of solving all kinds of social problems, and it is certainly not the case that the future belongs solely to interdisciplinarians. Disciplinary knowledge remains essential. I agree with Rianne van Lambalgen and Iris van der Tuin on this point. They advocate training "disciplined interdisciplinarians": [8]

individuals who, in their future professional endeavors, have the potential to assume significant roles in uniting diverse insights and perspectives, as well as guiding others in developing such [an] integrative skillset, whether in interdisciplinary academic programs or in various other contexts.

The main aim is for students to gain an understanding of other disciplines and their theories, concepts and methodologies. This enables them to take a perspective from their own discipline and explore a common basis with other disciplines from their perspectives. This exploration leads to the integration of knowledge and new insights [9]. Research by Jessica Oudenampsen confirms this. She concludes: [10]

Students become more aware of the value, principles and ideologies of their own discipline, and develop a greater willingness to continue studying it. At the same time, a change in perspective and perception occurs: students learn to see their discipline better in relation to other disciplines and also start to view students from other disciplines differently.

It is something I recognise in a course on law and language I co-teach with Marijke de Belder. In this course, law students and students from the humanities study, from both a legal and linguistic perspectives, the ambiguity of legal language and how rules and meaning can and must be interpreted. For example, is a potato peeler a stabbing weapon?

Students discover their perspective by virtue of other perspectives.[2] Interdisciplinarity is not merely instrumental but, like disciplinary thinking, has an important value in itself, as a critical exercise in thinking and reflection aimed at grasping of (in my case) what law is and what the context of law is.

And so I have built a bridge to the second part of this chapter: the law.

Human dignity

Human dignity was central to De Utrechtse School. How deeply tragic it is that the first half of the twentieth century was characterized by dehumanization. My parents belong to the generation that experienced this. They are war children, scarred by the bombing of Eindhoven, escaping the Arbeitseinsatz and fleeing to liberated territory during the hunger winter of 1944. What always comes to mind when I recount their stories is that they represent so many other people: war children, refugees, the invisible. Ultimately, it is always people and their suffering that form the basis of the law and the power structures from which the law stems and law often maintains.

People and their dignity are central. That is how it should be.

But still, their humanity and dignity so often go unnoticed. We rather see a problem or legal question without taking their story or life biography into account – they are merely fraudsters or fortune seekers, criminals and profiteers. This is poignantly illustrated in the so-called benefits scandal ("Toeslagenschandaal") where the law has failed and continues to fail. Indeed, as Ferry de Jong noted in his inaugural lecture: criminal law too, seems to have succumbed to the "nervous and authoritarian security ideology that writes off delinquents." [11]

2 I owe this insight, in part, to Kiene Brillenburg Wuth, who told us about her course Literature and Philosophy during an Education Director meeting on February 3, 2025.

Law in context: The world risk society

"Human existence is coexistence," I quoted earlier. But what does coexistence mean? In any case, it means that people live together. A society then, can be understood as the totality of human interaction, shaping mutual relationships, in institutions and organizations. The law functions here as an instrument that translates expectations regarding these interactions in rules of behaviour. [12]

Law and society are therefore "closely intertwined," as Pompe noted in his farewell speech in 1963. [13] The fact that law is an instrument does not make it a neutral instrument, because law is based on decisions. In the case of legislation, these are political decisions and in the administration of justice, they are judicial decisions. And every decision is informed by a range of factors, including factors that lie outside the legal domain. Ultimately, the decision is also based on a moral judgment. I will return to this last point later.

As law and society are so closely intertwined, a good understanding of the law also requires a good understanding of society – its context. That context is both social and scientific: other fields of knowledge feed into law and legal science, enabling us to understand social developments. This contextual approach is one of the three learning trajectories in the general bachelor's program and the master's programs in law at Utrecht University.

Law and the World Risk Society

One example may clarify this contextual approach and concerns looking at society from different theoretical perspectives. One such perspective is social theory with the aim to construct a socio-theoretical framework in which societal developments can be traced and their implications for law can be understood.

The world risk society is such a framework, as developed by the German social theorist Ulrich Beck. [14] The essence of this framework is that today's society is confronted with the side effects of the successes of industrialization and individualization. The confrontation with these side effects is visible in, among other things, the (social) consequences of those side effects, such as environmental deterioration, climate change, poverty, income inequality, and the moral detachment of groups and individuals. Dealing with these side effects, raises all kinds of questions, also for law. They force us to rethink fundamental legal concepts and their attendant theories and methodology.

I use poverty as an example.

It may take some mental effort to understand poverty as a side effect of an economic (global) order facilitated by law. Poverty is more commonly understood as fate or one's own fault. We therefore see it primarily as our moral duty to combat poverty by alleviating that hardship. Thinking from the perspective of the world risk society makes us realize and understand that poverty is the direct result of modern economic processes and their legal

foundations. Lawful action leads to extreme poverty, for which no one carries responsibility. There is an asymmetry between lawful action and the extreme side effects it causes, such as poverty and the underlying unequal access to prosperity. [15] Combating poverty therefore does not mean alleviating suffering and donating money. On the contrary, it requires a reflexive attitude towards the causes of poverty and its legal foundations, such as notions of private property, freedom of contract and the scope of third-party protection. [16]

The study of law

Even though in Utrecht we favor a contextual approach to the study of law, I observe that the study of law still takes a too positivist and doctrinal approach. There is insufficient room for synthesis and critical (and by definition more interdisciplinary) reflection.

Masja Zweers (a Utrecht alumna) noted this in *Sol Iustitiae Setting?* This book reports on the role of Utrecht University's law faculty in the history of slavery. In her chapter, she shows that the institutional focus on the study of law leaves a silence behind. This focus leaves unspoken the fact that the law is not neutral or impartial, but stems from prejudices and power relations. This silence legitimizes these prejudices and power relations, when they should actually be discussed. This is how we can understand, rectify, and prevent abuses (such as slavery and extreme poverty). It requires systemic change and institutional reforms. [17] One way to shape such a critical attitude and break the silence, is a more contextual and interdisciplinary approach to the study of law that has as its focus, the individual, her dignity and intersubjectivity.

And so I have built a bridge to the third and last part of this chapter education. I do not focus on what we should study but rather address the question why we should study.

Education: Judgement and responsibility

History seems to repeat itself. [18] The signs do not bode well. Dark clouds are gathering once again, also over Europe. Disinformation, post-truth, populism, hatred, nihilism, machismo, and dehumanization are all around us, attacking us with chainsaws. Surely it cannot be that my parents' generation, who embraced the rise of the liberal democratic constitutional state, are now watching it crumble, defenseless and powerless? How can we resist this? Isn't education key? And don't lawyers have a special responsibility when it comes to the rule of law, freedom, equality, and democracy?

A leap of faith

A university education is a privilege in the sense that it gives you the freedom to study, socialize, and develop yourself for a while, and where you can postpone making judgments. [19] Studying also comes with responsibility. This responsibility consists of the fact that, as an academic, you will constantly make decisions in your professional career that will have an impact on others. You need to be aware of this. It requires both an analytical eye and a critical mind. I would like to refer here to another legal luminary from the early twentieth century: Paul Scholten and the importance he attaches to the idea of judgment. A legal judgment is based on authority, is rational, and appeals to conscience. Forming a judgment and making a decision based on it implies a leap of faith. Scholten says: [20]

I think that there is more than merely observation and logical argument in every scientific judgment, but in any case, the judicial judgment is more than that – it can never be reduced to those two. It is not a scientific proposition, but a declaration of will: this is how it should be. In the end it is a leap, just like any deed, any moral judgment is.

The transformative relation and Bildung

It brings me to the goal of academic education. The educational theorist Paul Ashwin concludes that the educational goal of higher education is to bring students to a transformative relationship that brings about a change in who the student is and what he or she can do in the world. [21] Through education, you change as a person and that change makes you reflect on what and who you are and what you can and want to do: "What kind of lawyer do I actually want to be?"

The educational philosopher Gert Biesta elaborates on this transformative goal in three developmental domains that characterize education: qualification, socialization, and subjectification. [22]

Qualification is the domain in which students acquire knowledge in such a way that they qualify as, in this case, lawyers, with a toolbox of knowledge, insights, and skills. (In my opinion, this toolbox also means that they are capable of interdisciplinary thinking and can integrate knowledge from different domains.)

Through socialization, students are shaped into becoming part of a group: first and foremost, the university community itself, and subsequently, in respect of law students, the legal profession. Through a "signature pedagogy," [23] students are prepared for life as members of a community with traditions, manners and practices, norms and values. I would like to add that students can also position themselves as members of such a community in relation to other knowledge communities, and that this is part of that pedagogy.

Finally, subjectification stands for self-realization. Studying contributes to personal development and finding out who you are as a person and, for example, as a lawyer. This discovery enables students to act freely, and freedom means that you understand what is right, in the case of lawyers, what the underlying power structures are, what the limits of law are, and how law relates to justice. This knowledge and insight enable you to shape and give meaning to your future social role and the decisions you will make.

The (updated) Utrecht educational model and The New Utrecht School[3]

The three domains overlap and are inextricably linked. With a toolbox of knowledge, insight and skills, students find their own sovereign voice in their professional community and in society [24] The domains provide the foundation of the UU vision on education and the attendant model.

This model envisions a set of graduate attributes that distinguishes a UU-student. Students acquire a strong academic foundation in which they are challenged to explore disciplinary boundaries with an open mind, and develop into constructive and critical thinkers. They are able to collaborate, with each other and with societal stakeholders. They act ethically and with integrity, and they know how to communicate with specialists and non-specialists. UU students demonstrate personal leadership and are adaptive by adjusting to a changing social and scientific context.

To realize this vision, the educational model is based on three design principles. The first principle is Open Science and Open Education. This means that our education is diverse, inclusive, and widely accessible. It is fueled by research and collaboration with social partners. The second principle is Constructive alignment. This principle assumes that learning objectives, educational and study activities, and assessment are aligned with each other. The third and final design principle is Reflection on education. It stands for a culture of quality with a focus on teacher development, educational innovation, and educational research.

The New Utrecht School embodies the UU vision on education. It is an inter- and transdisciplinary platform that seeks to integrate knowledge and insights from science, the arts and society with an aim to address complex (and per definition interdisicplinary) societal problems. And it does so in the tradition of open science. New so-called "wicked problems" require an interdisciplinary approach. The coronavirus crisis has demonstrated the value of this approach, also in education. The course that Roos de Jonge set up from a medical perspective, to which I contributed together with ethicist Naomi van Steenbergen, is a good example of this. In this course, students (form medicine, ethics and law) study problems in health care from different disciplinary perspectives to experience the importance of different perspectives on a problem to arrive at new insights.

3 For the benefit of this volume, I have elaborated on the educational model and its relation with The New Utrecht School.

To conclude

Realising the UU vision is not only a didactic task but also a pedagogical one. After all, there is something at stake.

We are facing major threats and challenges. The climate change we have caused must be brought under control, and we are already having to deal with its ecological and social consequences. We are also confronted with how our thinking is threatened by generative artificial intelligence. This threat lies not only in the risks associated with GenAI thinking itself, but also in the way GenAI, and our use of it, is controlled. The third major threat lies in the geopolitical force field that, due to an illiberal turn in the US, is turning our worldview upside down, undermining the foundations of the liberal democratic constitutional state. These threats and challenges are intertwined, interconnected, and reinforce each other. It seems like a major "wicked problem" that appears unsolvable due to its complexity. But bear in mind: the problems were caused by people, by us, consciously and unconsciously. That means we are also capable of solving those problems. The most important first step in this direction is research, both disciplinary and interdisciplinary, and passing on the results: education. It also enables us to engage with wider society and its challenges in meaningful way, and contributes to students' self-realization as constructive professionals and critical citizens.

This is what is needed right now. Right now, there is a need for knowledge about languages and cultures. Right now, knowledge about climate and ecology is needed. Right now, knowledge about generative AI is needed. Right now, knowledge about human behavior is needed. And right now, knowledge about law and justice is needed.

Right now, universities are needed as independent bastions of research and education – as pioneers and gatekeepers of a fair and just world. We have a mission, and we are doing it together.

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PART II

Responsibilities
for the self
and society

06

(Re-)centering the humanbeing: Patient participation in healthcare, education and research

Roos de Jonge and
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Summary

Medical science has advanced rapidly in the past decades, providing patients with significantly safer and more effective care. Yet there is a darker side to this progress. Changes in society and science, growing healthcare expenses, and the strain on healthcare professionals have negatively impacted the connection between patients and their caregivers. In this chapter, we explore how a broad, holistic approach that draws on multiple disciplines can help counteract this trend. By focusing on the person (patient) at the center of a care network, as advocated by The New Utrecht School, new perspectives and practical tools emerge to enhance quality in healthcare, research, and education.

(Re-)centering the human being: Patient participation in healthcare, education and research

Introduction

When you enter the Hijmans van den Bergh building from the UMC Utrecht, you will see a photograph of Albert Hijmans van den Bergh, who the building is named after. In the photo you'll see a dignified man who commands respect, like many professors from that era likely did. The quote under his portrait is particularly meaningful. "The most serious illness is the illness of the patient who sits before you."

Hijmans van den Bergh was a gifted clinical researcher in an exciting era. The early 20th century saw huge advances in the natural sciences. In the medical field, discoveries came thick and fast. The trust placed in science led to high expectations and unparalleled optimism in medicine. Paul Ehrlich, the first Nobel Prize winner in medicine, presented the concept of the *Zauberkugel*: targeted "magic bullets" for every (infectious) disease. [1] Gradually, the belief that knowledge would ultimately conquer all diseases grew, and people even started to worry about what would happen if everyone simply continued to live indefinitely. Although Hijmans van den Bergh himself had made important discoveries, he was also aware of their broader implications, as is evident from the book, *Kijken kunst en kunde. Over onderwijs en A. Albert Hijmans van den Bergh* (Observation, Art, and Skill. On education and A. Albert Hijmans van den Bergh) [2]. In it, Frank Huisman writes the following: "According to Hijmans, breakthroughs in medical science had actually led to an overemphasis on curative, somatic medicine and a neglect of the person who was the patient." As a distinguished medical scientist, Hijmans van den Bergh demonstrated that he was aware of the limitations of knowledge alone. He remained, above all, a physician, consistently centering his role around the person before him – the patient.

Hijmans van den Bergh was not the first to focus on the patient. In the early 20th century, Sir William Osler, a legendary Canadian physician and one of the founders of modern medicine [3], wrote: "The good physician treats the disease; the great physician treats the patient who has the disease." Some 2,000 years before that, Hippocrates wrote: ***"It is more important to know what person has the disease than to know what disease the person has."*** How is this reflected in healthcare, research, and education today?

Patient participation in healthcare: Recent developments

The promise of medical science has largely been fulfilled in the past decades. We can see this promise reflected in an impressive growth of knowledge and a wide range of new treatment options. Magical boundaries have been broken; from spectacular forms of

medical imaging to the unraveling of the human genome and the birth of gene therapy. Patient care has undoubtedly benefited from this. Partly due to the rise of *Evidence Based Medicine*, today's treatments are standardized and grounded in scientific evidence. [4] For individual patients, the medical-technological improvements have had a major impact. Diseases that were once incurable can now be treated. Life expectancy has increased, and quality of life has greatly improved, although concerning differences remain at the global, regional, and even local level. [5]

The increased focus on quality and safety in healthcare has similarly reduced risks for patients, as have the mandatory continuing education programs for healthcare professionals and the growth and professionalization of medical associations. The assessment of new treatments by medical ethics review committees mitigates risks and ensures the protection of patients' interests. In addition, continuous internal and external quality of care evaluations in hospitals have improved the safety of medical practice. The question is what all this progress and expanded knowledge mean for the individual patient in practice – the person at the center of care.

"The surgeon approaches us, and even before telling us whether our daughter is okay, he proudly shows us a picture on his phone of the clot (as you call the solidified fluid) he has just removed from our daughter's body. Questions start racing through my head. Why does he have a phone in the OR? And if this is truly remarkable, shouldn't it be shared with the rest of the world? The surgeon has to move on – there's no time to answer my questions. My daughter is discharged immediately; her sternum held together with a wire. At home, a boisterous little brother awaits, who pays no heed to his sister's delicate chest. Does the hospital or the doctor realize what seeing such a photo on a phone does to me – or what my home situation is like, where I must constantly protect my daughter's sensitive chest?"

– Roos de Jonge

Patient participation in healthcare: Shared decision-making

The growing body of scientific knowledge is also accessible to patients. Medical background information is readily available online, and many medical protocols – for instance those for general practitioners – are largely open to the public. This has resulted in a rapid democratization of knowledge. An increased level of knowledge enhances not only the patient's position but also the quality of communication with the healthcare professional. It serves as the foundation for *shared decision making* – the complex process in which patient and healthcare provider jointly establish a care plan founded on the patient's preferences and interests [6]. Shared decision-making is a complex process. It's hard to capture in protocols and systematic evaluations, as it is always based on an individual and unique consultation between healthcare provider and patient. This is why Belgian general practitioner Jan Matthys compares it to art: *the art of healing* [7].

A fundamental requirement for shared decision-making is that the patient possesses the necessary knowledge to making decisions together with a healthcare provider. The duty to inform the patient rests primarily and traditionally with the healthcare professional. In practice, this often proves challenging.

"From week 26, we had biweekly appointments with the gynecologist to monitor the baby's growth. Everything was fine each time. She was developing nicely along the growth curve. By week 34, we were seen by a different gynecologist, but the examination routine remained the same and the baby's growth continued along the same curve. However, just as I was already holding the doorknob, ready to leave, the gynecologist pointed out to me that with such small babies there is a chance of abnormalities. Bye!"

– Roos de Jonge

For successful knowledge sharing, the healthcare provider must have the right communication skills necessary to adequately inform the patient in accordance with their needs, socio-cultural background, and educational level.
For this reason, communication training has become an integral part of every medical curriculum, with the role of "communicator" recognized as a key competency in the CanMEDS framework for healthcare professionals (Canadian Medical Education Directions for Specialists).

Translating these skills into everyday clinical practice remains an issue. [8–9] Many physicians lack the theoretical background and adaptive expertise required to apply these skills effectively. [10] Maintaining and further developing such skills is also not a standard part of mandatory continuing education and professional training. Perhaps most strikingly, there is no framework for patients to provide structured feedback regarding their healthcare professional's communication.

The information provided by the healthcare provider must, of course, also be objective. This constitutes an additional challenge, as the healthcare provider often has a preference informed by their professional expertise.

Now that knowledge is much more easily accessible, patients can also consult other sources of information. This is beneficial, as it reduces their reliance on healthcare professionals. Nevertheless, the sheer volume of available information has certain disadvantages. Without specialist knowledge, it can be difficult to filter and evaluate the vast amount of information available online. An additional problem is the growth of *fake news*. Fake news is a widespread social problem, but it has a particularly significant impact on health information. [11] This was true even before the COVID-19 pandemic and has only intensified since. [12] The resulting *infodemic* of misinformation makes it difficult to establish a consensus on shared facts, which is a prerequisite for *shared decision-making*.

During the COVID-19 pandemic, the exchange of information between healthcare providers and patients came under close scrutiny. [13] Both at the macro level (government) and the micro level (in the consultation room), a small but significant portion of the public remains difficult or even impossible to reach when information is delivered through traditional methods. [14] It is clear that a different approach is needed to bridge this gap. [15] The knowledge needed for a different approach is out there. For now it largely remains outside the realm of medicine, with a few notable exceptions. [16] It is therefore recommended to draw more extensively on knowledge from other academic fields, such as the humanities and social sciences, in line with the tradition of the Utrecht School (see, for example Van Charldorp et al.; Van Brussel et al., and Van Aken in this publication).

More importantly, it is essential to involve the ultimate target group – the patient – in both the short-term approach and the development of a long-term strategy. Simply coaching patients to engage more effectively in conversations does not guarantee success. [17] The unprecedented collaboration between patients, physicians, and scientists in addressing the AIDS epidemic illustrates the profound and far-reaching impact that direct and active patient involvement can have – not only on healthcare, but also on research and education. [18]

Patient participation in research

As described above, medical knowledge and the treatment of many diseases has improved enormously. Yet there is a darker side to this progress. Despite these great advances, *recent bench-to-bedside* research has not yet led to revolutionary breakthroughs like the discovery of insulin once did. [19] This is why major global diseases such as malaria and Alzheimer's remain largely incurable. On average, the development of a new drug requires astronomical investment and takes seventeen years to reach the market. Significant funding in medical research has contributed to a rapid and exponential expansion of scientific literature. This increase in quantity has not been matched by an increase or even maintenance of quality. On the contrary, according to several reliable sources, the amount of "waste" among published research is astonishingly high: the Lancet estimates it to be around 85%. [20] The financial burden of irreproducible research is equally significant, estimated at more than $28 billion per year in the United States alone [21] (see Huisman in this publication).

The growth in scientific publications can be attributed to multiple factors. The primary and most far-reaching cause is that publications are used as a surrogate measure of a researcher's quality, thereby significantly influencing their career prospects. [22] Consequently, scientific publications – originally intended as a means of disseminating scientific information – have become a goal in themselves, contributing to an exponential increase in low-quality research outputs. Nobel Prize winner Randy Schekman drew a comparison between the excessive importance placed on publications in academia and the bonuses paid to bankers on Wall Street, which ultimately led to the 2008 financial crisis when the bubble burst. [23] The similarity between the two lies in the fact that the means became the end, and the original goal was lost.

A further and frequently overlooked challenge is that healthcare professionals must navigate an almost unmanageable volume of publications in their field to keep their knowledge up to date. For example, a general practitioner specialized in epidemiology would need to dedicate more than 600 hours per month to keep up with relevant literature. [24] As a result, clinicians and patients face the same problem: they are confronted with an overwhelming amount of information, much of which is of questionable quality, making it difficult to distinguish between accurate and inaccurate data. Both are, in essence, sighted yet blind.

The causes of *waste in science* are manifold, as are the potential solutions. Efforts to enhance research quality must start at the earliest stage of the process: defining the purpose of the study. Ton Beekman, a doctoral student of Langeveld and adherent of the Utrecht School, wrote: "Meaning is not an added value, but is inherent to reality. This means that reality is always determined by meaning." [25] The significance of medical science in all its facets is that it ultimately helps the patient.

Accordingly, the initial and pivotal step in addressing this problem is to involve the patient once again in every facet of the research process, starting with the careful formulation of the research question. The work of the James Lind Alliance convincingly demonstrates that this is both effective and feasible (https://www.jla.nihr.ac.uk). The James Lind Alliance is a non-profit organization that brings together patients, caregivers, and practitioners within a so-called Priority Setting Partnership (PSP) to develop a widely shared research agenda with aligned priorities. In the case of children with Juvenile Idiopathic Arthritis (JIA), this process has resulted in the development of such an agenda, revealing that children's priorities frequently differ significantly from those of their parents and clinicians [26]. Children mainly emphasized the impact of the disease on their daily functioning. Previously, young people with JIA also indicated that learning to cope with the unpredictability and variability of the disease was especially important to them. [27]

Patient participation in education

"I just shared my story about Maggie in the lecture hall for the very first time. The hall has gone completely silent, with a few students quietly crying. We give them a moment to catch their breath and then we open the discussion. I am impressed by the thoughtful questions they ask, and I hope that they all carry Maggie with them when they face difficult dilemmas in the future. By now, I have shared this story with students many times. I find it energizing every time, and I can see a small seed of understanding and compassion for the patient growing within them."

– Roos de Jonge

Education is the starting point for real change. This is the place to implement fundamental reforms. First, the person must be re-established as the central focus. A crucial step in this process is to avoid viewing the patient merely as a passive participant – much like the patient who was demonstrated in the lecture hall – and instead to recognize their active role in both research and clinical practice. When patients contribute ideas regarding the form and content of education and provide feedback on practitioners' performance, this teaches students to prioritize people and think from a patient's perspectives. [28] Within the CLIKCS project and the interdisciplinary Medical Humanities minor – specifically in the hospital communication course by Van Charldorp and Eijkelboom – medical students and communication and information science students work collaboratively with patients to develop patient information. The patient selects the topic and offers students advice and feedback on their work. This enables medical students to gain a deeper understanding of patients' informational needs, while allowing humanities students to apply their knowledge and skills in a practical context.

Another step would be to enable future healthcare professionals to experience the situation of their patients by living by their rules and restrictions for a number of weeks. [29] In doing so, the physician takes a small step toward the ideal of the doctor, as Montaigne described nearly 500 years ago based on Plato.

"Plato therefore was right in saying that to become a true doctor, a man must have experienced all the illnesses he hopes to cure and all the accidents and circumstances he is to diagnose… Such a man I would trust. For the rest guide us like the person who paints seas, rocks and harbors while sitting at his table and sails his model of a ship in perfect safety. Throw him into the real thing, and he does not know where to begin." (Cited in A Leg to Stand On van Oliver Sacks van – Montaigne, Essays 3.13)

Knowledge and skills

This brings us back to the situation today. What are the implications of the developments in healthcare, research, and education for the individual patient in their unique social context – the person, as described by Hijmans van den Bergh, who sits before the clinician? How does this relate to what Beekman, following Heidegger, would call the "*Befindlichkeit*" of the patient? At some point in time, with the expansion of medical science and technology, something changed in the relationship between the patient and the clinician. Despite the seemingly unrestrained growth in healthcare costs, such financial increases have not led to enhancements in the quality of the interpersonal relationship between clinician and patient. Patients often find themselves faced with overburdened doctors and other healthcare professionals who seem to be short on time and attention. According to recent research, only 36% of doctors allow their patients to finish speaking, interrupting them after an average of 11 seconds. [30] Moreover, this trend is moving in the wrong direction. Similar research conducted over 25 years ago showed that doctors used to interrupt their patients after an average of 38 seconds. Due to super-specialization, patients often have to consult medical experts, who do not always communicate with each other effectively (see also *Schuurmans* et al. in this publication). Fortunately, today's patient is far better informed than their (great)grandparent who sat before Hijmans van den Bergh, reflecting, in part, the growing engagement of patients in the design and delivery of healthcare, research, and education. Patient associations are organizing themselves more effectively, often even across national borders, and are increasingly influencing policy, as exemplified by (PPMD, https://www.parentprojectmd.org). The new perspectives on health [31] and value-based healthcare [32] also indicate that a new development is underway, one in which a holistic view of the human being is central. The New Utrecht School aligns with this approach by placing the patient's perspective at the center and addressing their needs from a multidisciplinary standpoint.

"Healing,"
Papa would tell me,
"is not a science,
but the intuitive art
of wooing Nature"

The English poet W.H. Auden, the son of a physician, wrote this for his own doctor, David Protetch, who was always open and honest with his patients. In his poem, Auden expresses his gratitude to Protetch.

> "having been what all doctors should be, but few are."

His message: it is not just about knowledge. By putting people first, medicine regains its meaning and emerges once again as an art form as well as a science. This is reflected in the title of the poem: The Art of Healing.

Recommendations from The New Utrecht School on the patient's perspective:

- Provide structural feedback on communication with the healthcare provider from the patient's perspective;
- Incorporate knowledge from other scientific disciplines to improve communication between healthcare providers and patients, as well as between institutions and the public;
- Develop an educational and research agenda together with patients;
- Help patients play an active role in developing and shaping education;
- Encourage the involvement of other disciplines and the arts in medical education.

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07

Vignette: A network of stories: Interdisciplinary research at the verhalenbank psychiatrie (psychiatry story bank)

Gaston Franssen, Nienke van Sambeek and Floortje Scheepers

A network of stories: Interdisciplinary research at the verhalenbank psychiatrie (psychiatry story bank)

"The patient's story should come first." "We need to really listen to what clients have to say." "People who receive a diagnosis have the right to be heard." These are common sentiments in discussions about the future of medicine, healthcare and the health sector in general. Statements most people would agree on – after all, who would argue against listening to patients? However, true interdisciplinary innovation frequently requires acknowledging that what appears straightforward is, in reality, difficult to grasp. What exactly is "the" story of the patient? Can it really be permanently captured in a file? J.H. van den Berg [1], one of the founding figures of historical the Utrecht School, pointed out: "Everyone experiences their illness differently. Each patient enters their sickbed with a personal history and unique expectations for the future, making their sickbed a strictly personal experience that is ultimately incomparable." So how exactly should you listen to a patient? How can you give meaning to their story? Is there always just one "voice," or can a story, even if it belongs to one person, speak in many voices? [2]

These are the challenging questions we want to answer at the Verhalenbank Psychiatrie (Psychiatry Story Bank). At the story bank, people with experiences in mental healthcare – mostly (ex)patients, but also family members or care professionals – can "donate" their stories. They are invited to freely discuss their own perspectives on illness, recovery, and the healthcare system during an open conversation lasting approximately one hour. The conversation is transcribed and analyzed using different methods. We draw on findings from qualitative research on illness narratives and also use discourse analysis and computational approaches like *machine learning*. This helps us, among other things, to get a sense of the patients' "story context" – the way they experience and assess their lifeworld at the time of telling their story. [3] The results of these studies are translated into recommendations for healthcare practice. Additionally, with the donor's consent, selected stories are adapted into a "public version" and published on the website. For people who have had similar experiences, reading such a story can provide comfort, inspiration or recognition.

Analyzing patient narratives requires extensive interdisciplinary collaboration between medicine, medical psychology, sociology, anthropology and the humanities. We want to understand the underlying psychiatric context, but we also want to grasp their personal and practical consequences – and understand how stories come about, how they are structured, and how they connect with other stories. [4] One of the insights from our research is that establishing this connection with other stories is often very challenging; at the same time, it's essential for a proper understanding of the individual case. A patient's story never stands alone. The voices of others always resonate throughout the narrative. This could be the voice of the practitioner making a diagnosis, with its corresponding "standard plot," or a peer expert offering a different perspective on recovery. It might even be the voice of a journalist writing a widely read article on "confused behavior," or a character with a psychiatric diagnosis in a film or popular TV series. Finally, there are the "larger narratives" that shape our lives, such as a religious background, living in a society where individual success stories are emphasized, or cultural conventions that may have a stigmatizing effect. All of these are stories that resonate within our own personal narratives. All these stories resonante in our own personal narratives.

For this reason, the research team of the Verhalenbank Psychiatrie (Psychiatry Story Bank) brings together expertise in psychiatry, psychology, philosophy, sociology, and cultural analysis. [5] We map the individual narrative, but we also examine how this narrative relates to other – medical, societal, and cultural – narratives. From all these stories, each person, whether ill or in recovery, weaves their own highly personal narrative. By mapping out this intricate network of stories, we learn to listen more attentively to patients, viewing them not as isolated individual cases, but as multifaceted people who are connected to the world. We are not alone in this effort, the Wilhelmina Children's Hospital has recently launched a story bank for children following the principles of our story bank. It would be wonderful if we could collaborate with our partners at Utrecht University, the University of Amsterdam and the HKU University of Arts to create a hospital-wide story bank for everyone with experience of working in healthcare at UMC Utrecht. While this will inevitably present new challenges, we welcome the opportunity to explore this together.

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08

Vignette: The power of personal stories in education: The New Utrecht School

Louis Bont

The power of personal stories in education: The New Utrecht School

Everyone who works in healthcare has personal stories: as a healthcare provider, as a patient, as a family member of a patient, even those working as fundamental scientists and in more supportive roles as nutritional assistants for example. In all these cases, our view of our roles and tasks are colored by the experiences, we have gained, and these stories actually make us who we are. Yet they are often considered private and remain outside the education which we provide to the next generation of professionals. But is that a good thing? The New Utrecht School wonders whether it is not valuable to use these stories as a powerful educational tool.

Within The New Utrecht School, the importance of interdisciplinary collaboration and social and societal responsibility is emphasized. But what makes The New Utrecht School truly unique for the setting of the University Medical Center Utrecht is the recognition that care is not only about facts and techniques, but fundamentally also about the human experience. Connecting personal stories to education not only provides context, but also amplifies the emotional impact of the message we want to convey. These stories go beyond medical knowledge: they are the bridge to compassion and the human side of care.

I experienced this myself when my 75-year-old mother suddenly got colon cancer and palliative care was offered. The expectation was that her illness would have a rapid and drastic course. To my surprise, however, a stable picture emerged, and after years of treatment with MR-LINAC-integrated radiotherapy, she is now cured. Recently, she even attended the graduation ceremony of my son, who obtained his degree in sports science in Groningen. I can talk for hours about this experience, and especially how it changed my perspective on geriatric medicine. Rather than holding it as a private experience, sharing this history in education could be a valuable lesson for students preparing to work in healthcare. It illustrates not only the science behind the treatment, but also the emotional journey that families and caregivers are on. This type of story shows the complexity of healthcare practice, in which medical facts and human experiences go hand in hand. It helps future healthcare professionals understand the challenges of the profession, not as abstract concepts, but as concrete, personal realities.

While it aims to contribute to solutions for the complex challenges our world faces, The New Utrecht School also offers a platform where such personal stories are not only welcome, but are actively integrated into education and research as well. It emphasizes that care provision goes beyond knowledge and technology: it's about understanding the people we help and acknowledging their stories as part of the care experience. This is exactly what makes The New Utrecht School so innovative for the University Medical Center Utrecht: it offers space for the human dimension of care, and in that dimension the power of personal stories is undeniable.

09

The need for change: Interprofessional learning and working

Marieke Schuurmans,
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Roger Damoiseaux

Summary

The coming years will see significant changes in healthcare. Changes in population demographics present a major societal challenge and bring new challenges for the healthcare sector. The necessary changes to address this challenge are reflected in education programs, with the most important developments focusing on fostering interdisciplinary, flexible, and generalist approaches. Working and learning alongside professionals beyond traditional healthcare roles is a crucial driver of change. The New Utrecht School, an inter-institutional platform promoting deep interdisciplinary collaboration across the health sector, serves as a catalyst for this change.

The need for change: Interprofessional learning and working

It is still early on this crisp September morning as I walk into UMC Utrecht. As a GP in training, I'm visiting a patient who is undergoing experimental treatment for a degenerative neurological condition. I normally conduct these visits online, but with this patient prefer to meet in person – her poor eyesight and sensory issues from diabetic polyneuropathy make it hard for her to use a laptop on her own. The decision to undergo this experimental treatment was one we made together. Initially, she received treatment at a local healthcare center, but when that did not bring the desired results, we explored other options together. When I entered her details into the national experimental treatment system, this trial came up as an option. The nurse guiding patients through this treatment gave a thorough explanation of what it entails and how it might impact daily life. She also updates me regularly on how the treatment is progressing.

It is the year 2036, and Utrecht University is celebrating its 400th anniversary. What is life like for our professionals in training? And what developments over the past few years have led us to this point? Nearly a century ago, the historical Utrecht School (~1945–1960) made an initial attempt to develop a new vision of humanities and science, and sought to define the university's role in society in an innovative way. Approximately 10 years ago, this movement was revived in The New Utrecht School – an inter-institutional platform focused on advanced interdisciplinary collaboration across the broadly defined health domain.

Nowadays, healthcare professionals are educated along two key axes – resulting in what we call a T-shaped professional. The vertical axis represents subject-specific expertise, while the horizontal axis represents the non-specialized competencies needed to practice the profession. For many years, the focus was primarily on the vertical axis, with substantial investments directed toward increasingly specialized expertise. Generalist knowledge was often regarded as less important. Today, within their field-specific training, all healthcare professionals are trained in a wide range of areas, including prevention, acute care, chronic care and elective care. Among the non-specialized competencies, the classic CanMEDS roles, like leadership and teamwork, maintain a central role. Competencies once referred to as 21st-century skills, including critical thinking, creativity, and digital literacy, are also part of the training. [1] In every healthcare professional training program, considerable attention is given to (digital) communication, coaching skills and behavior change techniques, technological skills, and data-driven practices. These skills are woven throughout almost every part of the curricula. Over the past few years, the horizontal axis has gained much greater emphasis, and these generalist competencies have become a core part of what it means to be a healthcare professional. It is hard to imagine that many of these competencies

were once not considered core skills for healthcare professionals in training, or that all these programs once existed side by side rather than being designed in an integrated way. The evolving healthcare landscape has played a role in driving this change as well. The traditional division into primary, secondary, and tertiary care has been abandoned, and healthcare is now delivered in settings where it is most effective and efficient. This care can be provided at home or in a healthcare facility. Care is now driven by the patient's needs rather than by the available services, as was the case in the past. Healthcare professionals are no longer tied to a specific location and increasingly collaborate based on the patient's needs. Today, it is common practice for physicians, nurses, and other healthcare professionals, such as physiotherapists, to encounter each other during training in the workplace. In addition, there are many joint educational sessions. Courses in areas such as (digital) communication, coaching, and behavior change techniques are offered in a multidisciplinary setting. Scholars from entirely different fields, such as the humanities and social sciences, contribute significantly to shaping healthcare professionals. Students from different programs take courses together, focusing on topics such as behavior change methods. At the outset of these courses, it is often not immediately apparent which program a student is enrolled in, although this is usually revealed through the questions they raise during the course. The number of hours and the course depth also vary. Nursing students, for example, spend more time on communication, while medical students dedicate more hours to data-driven skills. The advantage, however, is that the programs allow a considerable degree of flexibility. While each profession has a minimum number of required hours, there is always the opportunity individual students always have the opportunity to explore topics further, based on their interests. It is also noteworthy that both programs involve extensive interaction with, for example, linguists, making issues related to patients' language and literacy an integral part of the training. Aside from all the professional changes, the biggest transformation has been the shift from professionals holding sole responsibility to shared responsibility with patients and their families. [2] This requires a completely different attitude from professionals and a different approach to their work. Various forms of technology have also become indispensable in healthcare. In education, connections have been established with engineers from Eindhoven. Collaboration with Wageningen's living environment experts has also become standard practice. Students from different backgrounds studying lung diseases and air quality collaborate on real-world challenges.

After the initial training that qualifies them for entry into the profession, every healthcare professional undergoes further specialized training. The duration of this follow-up training varies, depending on the context in which they work. A physician interested in ophthalmology who plans to work in a cataract clinic, for example, undergoes a relatively short period of follow-up training. If this physician later decides to diagnose and treat a broader range of eye conditions, they take the next step in their training. In this way, every field provides broader foundational follow-up training that can be undertaken after completing the initial program. These broader foundational training programs provide access to a defined segment of healthcare practice. Compared to twenty years ago, physicians' foundational training is now shorter and no longer fully comprehensive in terms of hands-on practice. In everyday practice, generalists take the lead in healthcare and coordinate care around the patient. Sub-specialists are consulted for specific questions, and treatment decisions are made jointly by the team and the patient.

The follow-up training programs are modular and structured around Entrustable Professional Activities (EPAs). EPAs were introduced at the beginning of this century alongside competency-based education. EPAs give practical meaning to competency-based training on the job, specifying which tasks a trainee can be entrusted to perform. [3] The number of EPAs required varies depending on the context. If a professional wishes to make a career change, the EPAs they have already acquired can facilitate a faster transition into a new healthcare role. Today, it is common for professionals to pursue lifelong learning and to be able to shift more easily within their field. Professionals are always part of a team made up of multiple disciplines, and learning occurs within this collaborative environment. During training, we make extensive use of scenario-based exercises to teach professionals-in-training how to treat patients effectively as a team. A key part of these exercises is ensuring everyone's role and expertise are clear, so they can be applied as effectively as possible. In everyday practice, it is normal for reflection on our actions to be organized in a multidisciplinary way, incorporating input from patients.

On-the-job learning remains central; it continues to be the foundation of healthcare professional education. All actors operate around and alongside the patient, which requires a flexible organizational structure. Healthcare organizations work closely together, enabling professionals to provide the right care in the right place. Students and professionals complete their EPAs on the job during the follow-up training programs. Over the past decades, training programs have identified overlapping EPAs that are important across various disciplines and can be applied in a general context. Specific EPAs continue to exist for each profession and discipline. In the workplace, everyone is both a learner and a teacher. Young professionals in training provide feedback to their supervisors on their practices, thereby introducing new knowledge and applications of emerging competencies into the workplace. Supervisors continue to oversee the learning of professionals in training and decide as a team when EPAs should be granted. These teams are made up of professionals from different disciplines who work together on the job. Nurses evaluate the work of physicians, and vice versa. Learning is a continuous process that spans an entire professional career. Many of the slogans from the early 2000s – such as "from disease and care to health and behavior", [4] "from providing care to ensuring care," and "from egosystem to ecosystem" – have, after an initial adjustment period, resulted in real, meaningful change.

Looking back, it can be said that the current approach to healthcare professional education has emerged from a combination of, on one hand, the professionalization of education and, on the other, major changes in the healthcare landscape. By the early 2020s, it had become clear that the healthcare system was no longer sustainable. The global pandemic, which disrupted routine care for an extended period, highlighted the urgent need to redesign the healthcare system [5]. In the years leading up to the pandemic, it was already clear that, due to demographic changes and the expansion of medical capabilities, the way healthcare was organized was not future-proof. Projections showed that, if conditions remained unchanged, one in four Dutch citizens would need to work in healthcare by 2040 [6] – a scenario that was both impossible and undesirable. During the pandemic much care was deferred; this highlighted the fact that the care provided did not always solve the problems patients were experiencing. This had already been a topic of debate prior to the pandemic, and campaigns such as "not everything that can be done should be done" sought to make this clear. Patient participation was high on the agenda in healthcare, education, and research. Nevertheless, it was the pandemic that served as a catalyst for significant, system-wide change. The resulting surge in absenteeism and turnover among healthcare professionals, combined with the long-standing rise in burnout among students and early-career professionals, played a role as well. Nationwide and regional experiments, launched under the banner of what was then introduced as "appropriate care", [7] reshaped the healthcare landscape. Examples include bringing care closer to home, making use of digital and technological advances, and – most importantly – designing from the patient's perspective rather than that of healthcare provider. In this context, the role of healthcare professionals shifted. They now guide patients in making informed decisions based on their expertise, rather than prescribing what is best through a one-size-fits-all or strictly guideline-driven approach. These approaches create more opportunities for interdisciplinary interaction. The old hierarchical systems have become less rigid, enabling the transition from an egosystem to an ecosystem approach. Since healthcare education is so closely connected to practice, longstanding concepts like interdisciplinary learning, focusing on the individual in their context, and the continuous cycle between theory and practice have truly been put into action. These concepts, core tenets in The New Utrecht School, acted as a catalyst for change. Utrecht University, especially the University Medical Center Utrecht, has taken the lead in this effort. These efforts have borne fruit regionally, nationally, and internationally, and have also prompted internal organizational changes. The renewed emphasis on education as a core task of the university – alongside research and professional impact – was a major focus in 2021. Utrecht is leading the way with this approach today.

After visiting my patient at UMC Utrecht and discussing the course of treatment with the specialized nurse, I head to my weekly training day at UMC Utrecht. Our session begins with a module for GP trainees, focusing on providing primary care to vulnerable elderly patients in their own homes. Our instructor emphasizes the importance of receiving continuous care from the same general practitioner for this patient group. Having a long-standing treatment relationship allows changes to be detected earlier on, and – in difficult treatment decisions – there is the advantage of knowing your patient and understanding their preferences. Specific case studies make the material engaging and teach us how to organize care systematically for this patient group. Naturally, managing care is not something a GP does alone. In the afternoon, we join trainee community nurses and pharmacy students for a module on polypharmacy in elderly patients. We explore each team member's expertise and learn to understand what our responsibilities are in the care process. By attending classes taught by teachers from different professions, we gain a clear understanding of how the synergy of collaboration is achieved. I'm looking forward to discussing these topics tomorrow with my colleague nurse and pharmacist at our shared training practice in the 'Kanaleneiland' neighboorhood. I suspect that the practice in our neighborhood will be somewhat more challenging than the theory we covered today. I plan to report back on these differences during next week's session.

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Vignette: The importance of understanding the scientific process for education and communication

Isabel Arends

The importance of understanding the scientific process for education and communication

On October 28, 2021, a public dialogue organized by The New Utrecht School took place, with themes including the public image of science and health communication – how do scientists communicate with each other, as well as with the broader society? Alongside Niels Bovenschen (Professor in Biomedical Research-based Education), Stefan Gaillard (editor of *Journal of Trial and Error*), and artist Alexandra Hunts[1], I addressed these challenging and, above all, complex topics.

At the Faculty of Natural Sciences, we have considerable experience addressing interdisciplinary challenges through the Descartes Centre and the Freudenthal Institute. They work on similar fundamental questions and problems in the fields of philosophy of science and history of science, just as The New Utrecht School does in the interdisciplinary domain of health. An intensification of this collaboration in the areas of interdisciplinarity and reflective practice is therefore a logical next step. This will entail collaboration not only among scientists, but also with artists, patients, and other stakeholders.

Within our faculty, we are highly active in public engagement. Scientists not only communicate about their work, but also actively engage in dialogue with members of the public of all ages. Through this interaction, they can demonstrate to a broad audience that research is a process of *trial and error*, and that scientific conclusions can change – for instance, as evidenced by the continuously developing understanding during the COVID-19 pandemic. Interdisciplinary research is also conducted in this context, with interdisciplinary insights being used to make this dialogue more effective. The public dialogues of The New Utrecht School are an excellent example of interdisciplinary science communication.

Furthermore, the Faculty of Science has considerable experience in studying complex problems – situations that cannot be reduced to simple, individually solvable questions. The *Centre for Complex Systems Studies* brings together researchers from various disciplines – often in the literal sense, on the fourth floor of the Minnaert Building at Utrecht Science Park – to study complexity and complex phenomena. Scientists from different fields engage in ongoing dialogue. In the near future, the fourth floor of the Minnaert Building will also welcome researchers focused on artificial intelligence, enabling even wider interdisciplinary collaboration.

In the coming years, the Faculty of Science will continue to focus on interdisciplinary collaboration in the areas of Life Sciences, Sustainability and Artificial Intelligence & Data Science. Utrecht has one of the oldest traditions in terms of interdisciplinary collaboration in artificial intelligence, and continues to be a frontrunner in the field today. By continuing to facilitate interdisciplinary collaboration in health within The New Utrecht School, and by further strengthening interfaculty cooperation, we will secure Utrecht's position as a frontrunner in tackling societal challenges.

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Fostering diversity and inclusion in our university culture

Gisela van der Velden
and Gönül Dilaver

Summary

Every person is unique and brings their own perspective. Embracing and respecting diverse perspectives within university culture, the classroom, and the professional field contributes to finding better solutions to societal challenges. (Bio)medical research and care exist primarily to serve the needs of a diverse society. History has shown that neglecting human diversity can lead to serious, even life-threatening errors – for example, in the treatment of women. A culture grounded in knowledge and expertise on diversity and inclusion helps cultivate an inclusive *mindset* ***among our professionals, thereby enhancing education, research, and healthcare.***

Fostering diversity and inclusion in our university culture

The significance of diversity and inclusion in the (bio)medical field

The members of the historical Utrecht School saw each individual as a complex and unique whole of body, mind, behavior, and consciousness, comprehensible only in the context of their specific lifeworld. From birth, individuals begin forming associations shaped by this lifeworld. [1] Our associations are a mechanism of the brain to filter and categorize the large amount of information we encounter daily. These associations also help us make quick decisions when the situation requires it. Is a tiger dangerous or not? Ideally, you wouldn't have to think twice if you were to encounter one.

Associations are shaped by our personal experiences, the people around us, our education, and the images prevalent in our society. The books our children read have a significant influence on the associations that are formed in their young minds and shape how they view the world as they grow. It is worth noting that associations are unconscious, and we are often unaware of how they influence our behavior, policies, research, and healthcare. This chapter will discuss the importance of diversity and inclusion from a (bio)medical perspective within The New Utrecht School.

Unconsciously, society often treats white men as the standard for humanity. Consequently, textbooks over the past decades have often failed to represent the full diversity of our society, and our (bio)medical research – and, by extension, education and healthcare – has not been sufficiently inclusive. In textbooks, the images are mostly of men, unless the female reproductive organs are being discussed. [2] Moreover, textbooks frequently feature white individuals, providing little information about people of other ethnic backgrounds or skin tones. [3] In preclinical research, biomedical researchers often do not know whether the cells they are working with originate from a male or female donor. When working with laboratory animals, male animals are used in the majority of experiments. [4] When both male and female animals are used, the data are often not separated, preventing the study of sex-based differences. [5] Similar patterns are seen in clinical research.

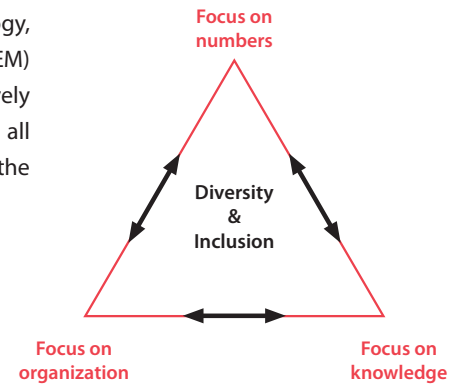
In clinical studies, most participants are generally white men. [6] A common justification for this is that hormonal fluctuations in women might complicate data interpretation. What's not taken into account in this reasoning is the fact that women with hormonal fluctuations will also use these clinically tested medicines should they reach the market. Moreover, certain medications in the past have led to abnormal fetal development in pregnant women. [7] To prevent this, women were often excluded from participation in phases 1 and 2 of clinical trials. [8]

When data from women or people of different ethnic backgrounds are collected, it is frequently pooled with those from white male participants, preventing separate analysis [5]. In 1983 and 1988, the U.S. Food and Drug Administration (FDA) investigated how data from men and women were analyzed in clinical studies in the United States. It was found that data from men and women were analyzed separately in only 54% of the studies [8]. As a result, any differences that may exist remain undetected. This is exemplified in the case of cardiovascular disease. We now know that women with cardiovascular disease may experience symptoms that differ greatly from the classic heart attack symptoms everyone is familiar with. In women, it may present, for example, as pain between the shoulder blades or as abdominal pain [9]. because this is not widely known, women often endure symptoms for longer and fail to receive the appropriate treatment from the onset of their complaints. This can lead to unnecessary, irreversible damage to the heart, potentially resulting in lasting consequences for the patient.

There are more examples from (bio)medical research that provide valuable lessons. It is therefore crucial to instill in our current students – the researchers and healthcare professionals of tomorrow – the importance of integrating a diversity of perspectives from the outset of any research. This approach helps prevent the repetition of past mistakes. But how can this be accomplished?

A key objective of The New Utrecht School is to equip (future) professionals for the challenges ahead by promoting multidisciplinary and interprofessional education in an inclusive and diverse learning environment. To achieve this, a comprehensive approach across three dimensions is necessary. We must work simultaneously on the composition of students and staff (focus on numbers), the learning and working climate (focus on organization), and the development of our knowledge and expertise (focus on knowledge).

The components of this triad, derived from research on gender in the science, technology, engineering and mathematics setors (STEM) [10-11] can reinforce one another negatively and positively. It is important to work on all three aspects of diversity and inclusion at the same time, as the process is not linear.



Focus on numbers

Focus on numbers refers to the composition of students, lecturers, researchers, and healthcare staff within Utrecht University and the UMC Utrecht. Within the Faculty of Medical Sciences, approximately 10% of students have a non-Western migration background, a significant difference compared to the more than 20% among pre-university (VWO) pupils in Utrecht and the surrounding area. To increase diversity in our faculty, active efforts are needed in outreach, recruitment and selection. Research shows that having a diverse student population does not automatically lead to a diverse workforce. Leyerzapf shows that at the Faculty of Medical Sciences of VU University, of the 20 to 30% of students with a non-Dutch background, only 2 to 4% advance to become medical specialists. [12] Differences in culture, socio-economic status, sexual orientation, and religion continue to serve as grounds for exclusion. [13] In Utrecht, the progression rate is comparable. When the student population as well as the teaching and research staff are diverse, students from varied backgrounds are more likely to encounter role models with whom they can identify. Outreach activities also become more meaningful when prospective students feel that they truly belong – when they feel welcome and free to be themselves and are embraced for their unique qualities. After successfully completing a program, it is important that all alumni are able to convey their unique qualities to others.

Unfortunately, achieving diversity in terms of "numbers" – having a diverse student and staff population – does not automatically lead to inclusive and positive interactions. It is therefore essential to address both the learning environment and the organizational culture within our programs simultaneously.

Focus on the organization

A diverse organization is not automatically an inclusive one. Processes of *othering* – defined as establishing one's own "normal" positive social identity by distancing oneself from “the other” (*the other)* – can pose a barrier to creating an inclusive learning and working environment. Students provide numerous examples of situations in which they are positioned as "different". One medical science student recounted an experience in which a patient remarked, "I don't want a black person at my bedside." The student’s supervisor asked the student to wait in the staff room and, regrettably, did not discuss the incident with the student after the consultation. Another example is when a supervisor asked a student where her parents were from. When the student answered "Turkey," the supervisor asked, "Are they Erdoğan supporters too?"

These examples illustrate the importance of equipping our teaching staff to address the increasing diversity within the organization, society, and healthcare. Our teaching staff must be able to foster a sense of belonging among students and provide them with support. In order to create support for an inclusive climate, adequate attention must be

given to organizational aspects as well. [14] It is essential that all stakeholders understand the importance of diversity, mutual respect, and the organizational culture. This concerns both written and unwritten rules; not only formal regulations but also norms and values. Culture plays a crucial role in shaping the professional identity of students and teaching staff, as well as their well-being.

Research indicates that a sense of belonging significantly affects students in multiple areas. Belonging can be defined as the experience of individuals feeling accepted, respected, and encouraged by others. [15] Research shows that belonging affects students in areas such as engagement and active participation, academic success, perseverance, [16,17] student well-being, [17] and psychological functioning. [16]

The learning and working environment should not be stereotypical, and all individuals should feel safe enough to voice concerns and participate in open dialogue. [18] Mutual understanding and respect for all cultural backgrounds, sexual orientations, gender identities, and religious beliefs are essential. It is important to include all stakeholders in this process, as prejudices are often unconscious, and the exclusion of individuals frequently occurs unintentionally. These principles equally apply to clinical practice, where healthcare professionals (including those in training) are better able to showcase their competencies when they are able to express their authentic selves. Again, not *in spite of* but *because* of their unique qualities. Exposure to a diverse population enables healthcare professionals to become more practiced in perspective-taking, which will help them in approaching every unique patient. This increases the likelihood that patients will feel comfortable and welcome in a healthcare setting, as they are more easily understood, regardless of their socio-cultural identity. Each person is unique, and these differences should be embraced.

Focus on knowledge

By focusing on knowledge, we can demonstrate the importance of diversity and better understand the impact of inclusivity in an organization. Greater diversity within the organization provides a wider range of perspectives on existing issues. Having diverse project teams, for example, allows a problem to be examined from multiple perspectives, which can lead to greater innovation and better solutions. Research indicates that this contributes to knowledge development and subsequently to the improvement of the quality of our education, research, and healthcare. [19–20] This is also why interdisciplinarity is so important: it broadens perspectives. Greater knowledge of diversity and inclusion among our students and teachers will create space for dialogue about our identities and how they influence our education, research, care and learning. It is therefore necessary to review curricula, make teaching materials less homogeneous or stereotypical, and ensure that they provide a more realistic representation of society. Research into diversity and inclusion, as well as education about their importance, contributes to our knowledge in this area. As mentioned earlier, various biomedical studies show that a lack of diversity in research can have far-reaching consequences. For example, symptoms of autism present differently in women than in men, resulting in women being more frequently misdiagnosed. [21] Many women are initially diagnosed with an anxiety disorder, phobia, depression, or personality disorders, such as borderline, eating disorder, PTSD/trauma before receiving an autism diagnosis. [21] ADHD is also diagnosed more frequently in men than in women, presumably because it is more often overlooked in women. [22] Research on diversity and inclusion within The New Utrecht School will expand our knowledge and expertise. Focusing on knowledge of diversity and inclusion will highlight areas where further action is needed and where good practices are already in place. At the same time, we must continue to evaluate the usefulness and impact of projects, such as the development of educational programs, training sessions, workshops, and process changes.

Translation of this vision into current practice and education within The New Utrecht School

To implement the approach described above, it is necessary to introduce changes within our educational programs. At The New Utrecht School, this starts with cultivating a diverse student body and teaching staff in order to create a diverse classroom. [18] Everyone has something unique to offer when it comes to education. This may involve offering new insights to peers or instructors, as well as integrating ideas from diverse project members that reinforce each other, thereby enhancing the quality of the results. [19–20] Having a diverse teaching staff will also attract a diverse student body. Teachers serve as role models for future professionals, so when students can identify with their teachers, they are more likely to believe in their own potential.

In addition to a diverse population, it is also important to have a diverse curriculum. Our students must be educated with an inclusive mindset, recognizing that diversity can be incorporated into all aspects of their work. [23] For researchers, it is important to consider diversity from the outset of a study, for example by carefully selecting the cells or laboratory animals used. In subsequent steps, clinical studies should include all possible groups in society, but data from different groups must also be analyzed separately. This is something that future professionals need to learn in their education *today*. It is important for professionals to learn how to see things from different perspectives. Themes that contribute to this can be found throughout The New Utrecht School, such as patient participation and interdisciplinary learning and collaboration. It is vital for healthcare professionals to gain understanding of how diseases manifest in different societal groups. A future dermatologist, for example, must understand how dermatological conditions manifest in individuals with darker skin and how this may differ compared to patients with lighter skin. [3] When differences between men and women exist, it is important not only that future physicians learn about them, but also that they remember these differences can occur in clinical practice.

Life Sciences and Society

The vision of The New Utrecht School emphasizes the importance of a strong connection between education and society: We are educating the (bio)medical professionals of the future, and they must align their work with the needs of society. This is also supported by the strategy: Connecting Science and Society of the Dutch Research Council (NWO) 2019–2022. [24] At Utrecht University, this approach has been introduced in the Master's program Biomedical Sciences, where a six-month curriculum has been developed for all students of the Graduate School of Life Sciences. This interdisciplinary program, called Life Sciences and Society, ensures that the connection with society is firmly embedded in the curriculum. [25] Through the module History and Philosophy of Life Sciences, students gain a historical perspective on the life sciences. Subsequently, in the Open Science module, students learn how research can be made sustainable for the future. The module Diversity Perspectives in Research introduces students to diversity perspectives within their research, while the Ethics and Research Integrity module engages them in reflecting on ethical issues and questions of integrity. All aspects come together in the Global and Environmental Health module, where themes such as health equity take center stage. Complementing all theoretical components, students work on a project with an external partner at the intersection of science and society. Partners that have collaborated in the past include RIVM and the Utrecht Young Academy, with future projects being discussed with the Rathenau Institute, Ambulance Zorg Noord-Holland (Ambulance Care Noord-Holland), and the Dutch Research Council (NWO). Within the project, students can apply what they learn in the modules immediately and contribute directly to addressing a societal challenge. Participants develop interdisciplinary teamwork skills and gain practice in perspective-taking, an essential competency for working in diverse teams. They are trained to adopt an inclusive mindset, which they are expected to bring into their professional and social environments. Hopefully, this good practice will spread through the university like wildfire, from The New Utrecht School to other faculties, contributing to a more inclusive and diverse society.

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12

Vignette: The New Utrecht School as a vision and strategy

Manon Kluijtmans

The New Utrecht School as a vision and strategy

The University College Utrecht (UCU) was the first liberal arts & sciences college to be established in the Netherlands and, since its inception, has been at the forefront of educational innovation in Utrecht. With the emergence of The New Utrecht School as a vision, strategy and platform, UCU has found a strong partner in the shared conviction that education is more than the delivery of knowledge. Higher education should invite students to examine themselves and the world around them, to ask what they want from life, how society ought to be, and how they can contribute to such a society. Working together over many years, we have helped turn that vision into daily practice in Utrecht, and our shared approach now serves as an example well beyond the Netherlands.

Interdisciplinarity is built into UCU's fabric. Whereas many students at the broader university first develop a disciplinary foundation and only later move into interdisciplinary contexts, UCU students learn from the outset to connect fields and methods. Their majors and theses give them firm disciplinary footing and, on top of that, the competencies to build bridges. This makes them natural connectors in interdisciplinary teams and a clear match with the ambitions of The New Utrecht School. Our campus illustrates both the challenges and the promise of this approach. It is a closely knit residential community where students live and learn together, creating bonds that extend beyond the classroom and support a diverse and inclusive culture. At the same time, we recognize the work still to be done to open the campus more fully to wider publics, so that community-building includes the city as well as the college.

Openness defines both our teaching and scholarship. With half of our students coming from abroad, diversity and inclusion are part of daily practice. In the spirit of open science, learning is reciprocal: we learn from our students as they learn from us. A simple but telling example is the student-led workshop on inclusive language for staff, which sharpened our practice and showed how co-creation strengthens quality. Our teachers combine teaching with time for scholarship, which aligns with open science and with the renewed recognition and rewards agenda that values excellence in different academic roles. Another example is the One Book, One Campus initiative, which connects students, university personnel, and the public across disciplines, faculties, and both academic and non-academic backgrounds and positions.

Seen through this lens, The New Utrecht School translates Open Science into education in a way that fits UCU's values: the individual is taken seriously, diversity and inclusion are treated as essentials, and collaboration across boundaries is normal rather than exceptional.

The actualized Utrecht education model points in the same direction. In content and in spirit it aligns fully with The New Utrecht School, and together they form a coherent whole. The New Utrecht School shows – in a broad and encompassing way – how the Utrecht education model can be put to work, with UCU as a living example and innovation space where strong disciplinary study and interdisciplinary practice come together for the benefit of students and society.

13

Cross-boundary conversations: The university's societal impact

Mirko Noordegraaf,
Rebecca van Musscher
and Janneke Plantenga

Summary

In this chapter, the authors discuss the importance of "opening up" science and universities, and of establishing connections with the outside world. By emphasizing societal impact, academic education and research can be connected to societal challenges, partners and practices. This requires boundary spaces, so that "inside" and "outside" can truly come together. The landmark AKWAGLOT, a wooden floating artwork created by Utrecht University in the Catherijnesingel (now on permanent display at the Botanical Gardens), is an example of such a boundary space – a "boundary object." It enabled the university to connect with the city and wider society, facilitate encounters, produce Glotcasts (podcasts), provide a space for art and culture, and stimulate creativity. This fits well with the principles of modern science.

Cross-boundary conversations: The university's societal impact

Introduction

At the time of writing, AKWAGLOT is floating in the Utrecht Catharijnesingel. AKWAGLOT, designed by a Belgian/Norwegian artist duo, is a semi-covered wooden platform intended to encourage encounters, dialogue, cultural activities, and connection with the city. It was brought to Utrecht by Utrecht University to enable "location-based science." On AKWAGLOT, scientists can share their knowledge not only with fellow researchers but also with the municipality, societal partners, citizens, businesses, and professionals. Conversely, citizens and businesses can engage in dialogue with scientists and others from the city and region. As a location-based science site, it serves as a connecting platform, a meeting place and a cultural stage where anyone can make their presence felt.

More substantively, AKWAGLOT facilitates the discussion about the relationship between the university and the city, and enables specific urban developments to be visualized and explored. Themes such as health and vitality are central, alongside – or better yet, in relation to – sustainability and inclusivity. Through podcasts – "GLOTcasts" – city dialogues, impact cafes, and workshops, we can amplify the voices of the city, and filmmakers have been documenting these activities. The New Utrecht School's public dialogues are connected to AKWAGLOT, both directly and symbolically.

No one requires us to bring such a platform to Utrecht, as it is not part of our core responsibilities. Yet we feel motivated to create such a landmark. In fact, we did it before with "Skyscraper," the iconic plastic whale that leapt from the water in front of Tivoli Vredenburg. We feel the responsibility to undertake such initiatives because, as a university, our aim is to "open up." Traditionally, we have excelled in academic research and education within the walls of our university. As scientists and support staff we are increasingly venturing into the city, region, country, and world, while simultaneously bringing the world into our university. AKWAGLOT is a new "boundary object," creating a novel inside-outside space: an *in-between zone*. This space exists not only between academic disciplines, but, above all, between science and society, the university and the city, and scientists and citizens. This aligns with The New Utrecht School's ambitions of connecting academic education and research with the arts, "the other", and "the outside world."

In this contribution, we highlight the importance of opening up the university, connecting the inside and outside worlds, and the significance of boundary spaces, boundary objects, and boundary language. This reflects the ambitions and work of The New Utrecht School. We conclude with a call to both "the inside" and "the outside", because establishing societal connections does not happen automatically.

Opening up science and the university

Open science has recently attracted significant attention. As a visible movement, it seeks to foster openness in scientific research, [1] which is evident in a number of key ambitions: a) scientists (and support staff) need to be recognized and valued differently because academic excellence is not only about research achievements but also about teamwork, teaching quality, and leadership; b) public engagement must be strengthened; c) open access to publications needs to be increased; and d) efforts must focus on FAIR data: data that are findable, accessible, interoperable, and reusable.

There are a number of reasons why these ambitions are important. Research processes can become more transparent and thereby more legitimate, and the research output more useful. The university can focus on more than just research. Researchers do more than conduct studies; they connect their work to societal questions and challenges. Within our faculty, for example, researchers collaborate with organizations and professionals to promote the professionalization of public services in healthcare, education, and safety, to encourage responsible digitalization, to develop effective judicial practices, and to shape the work of the future. Citizens and businesses can participate in research and education as "co-producers"; they can also engage in "co-creation." Researchers, teachers, and professional staff collaborate more effectively with partners across boundaries – not only in applying research but, above all, in jointly setting agendas and planning programs.

Although this may appear recent and novel, efforts to promote a more "open" science have been underway for some time and in various forms. Within our university – and particularly within our Faculty of Law, Economics, Governance & Organization (REBO) – academic education has, for many years, been linked to labor markets and career prospects. Guest speakers and case studies are deliberately integrated into the curriculum, and alumni relations are actively strengthened. Moreover, efforts toward "lifelong learning" or "education for professionals" have been ongoing for some time. Academic advisory work, involving knowledge-intensive consulting for public, societal, and private organizations, has also been carried out for several decades. For example, we recently advised the Ministry of Justice and Security on the implications of declaring a state of emergency. We have long employed innovative approaches to facilitate engagement, including public lectures, film days, science days, impact cafes, and "impact nights," as well as other creative methods for connecting scientists with schools, citizens, and the broader community. One example is the "Meet the Professor" initiative. Lastly, through "deals" with various organizations, we can collaboratively initiate and design research projects, align PhD positions with these projects, and apply the results in both educational and societal contexts.

Several years ago, we translated all these activities into four core activities within our REBO faculty by means of a "Strategic Agenda for Societal Impact." [2]:

1) *Societal learning:* education, labor market, and society;
2) *Societal advising:* academic advice and consultancy;
3) *Societal interaction:* public engagement and outreach;
4) *Societal co-production:* "deals" and collaborations.

We prefer the term "impact" over "valorization," as societal impact, for us, means promoting a knowledge-based, two-way dialogue between science and society. It is *not* about "marketing" the knowledge "we" produce. Knowledge is everywhere; our main task is to organize "knowledge circulation," in which the university has a distinctive role – ranging from safeguarding and transferring bodies of knowledge, to strengthening theoretical perspectives and methodological approaches, and to protecting critical capacity.

Bridging the inside and the outside

Opening up science entails building strong connections between the "inside" (the university, academia, research, and education) and the "outside" (the city, the region, citizens, businesses, partners, and stakeholders). This means that scientists are not active only within "their" own discipline or domain, but also across boundaries. This involves, on the one hand, collaborations between disciplines, and on the other hand, collaborations with partners and stakeholders. Such engagement is driven by the understanding that science is not an end in itself; rather, it serves society. It is reflected in the education of young people and the systematic analysis of societal issues and challenges. Issues related to health, vitality, sustainability and inclusivity as well as challenges like obesity, infectious diseases, pollution, loss of biodiversity, and illiteracy. The interdisciplinary collaboration between The New Utrecht School, UU, UMC and HKU aligns seamlessly with this approach. It could be further enhanced, particularly with regard to our faculty and the REBO disciplines.

Although the university does not engage in politics or set policy directly, it can support political and policy processes, as well as other societal channels, in addressing these questions and challenges. From an academic perspective, we must remain critical, preserve space for curiosity-driven or "blue sky" research, allow for serendipitous discoveries, and guard against the premature application of knowledge. In addition, we have a responsibility to provide "facts and figures", to structure societal debates, and to offer scenarios and courses of action. Further discussions could explore the relationship between this and societal expectations of what the university is or should be, as well as how citizens perceive scientists and their value.

Highlighting societal challenges also encourages multidisciplinary research and education, as well as stronger engagement with citizens and businesses. This not only enhances the impact of knowledge – ensuring that people act upon the insights we generate – and strengthens our legitimacy, but also allows us to actively draw on and integrate the experiences, ideas, and

knowledge of citizens and businesses into scientific work. This takes place through initiatives such as the Nationale Wetenschapsagenda (Dutch National Research Agenda, NWA), the Utrechtse Wetenschapsagenda (Utrecht Research Agenda, UWA), and through "citizen science" initiatives, where citizens are actively involved in research.

The importance of boundary spaces

Linking the inside and outside through encounters and dialogue does not happen automatically. On the contrary, there are many real barriers and obstacles that make such interactions difficult. In other words, even crossing boundaries has its boundaries. Some of these are *organizational* in nature: The university is a large organization, with corresponding structures, divisions of responsibility, and established procedures. Existing organizational structures are affected, influenced, and sometimes even turned upside down when we work in an interdisciplinary and socially oriented way. There are also *cultural* boundaries: Researchers are not necessarily trained to engage with society in different ways or to collaborate across disciplines. Plus, as academics, they tend to feel loyal to their colleagues within their own disciplines.

Finally, there are the *content-related* boundaries: When academics or academic institutions connect with the outside world, they not only compromise the "safety" of their discipline and domain, but also the ability of working "at a distance" in a knowledge-focused and critical manner. The moment you connect with partners and stakeholders, all sorts of questions arise. For example, who determines the content of research and education? Does this not make you too reliant on what others consider important? Do you also risk becoming financially dependent or allowing political or commercial interests to exert too much influence? Are you at risk of losing what makes your discipline unique? And how can you remain critical if you become dependent? Is there still room to voice disagreement and push back? What happens if the outside world becomes threatening, or if you yourself are threatened…? To illustrate, our faculty has carried out research on child abuse within the Jehovah's Witnesses community. This resulted in public attacks on individual researchers and even lawsuits, with the research team having to appear in court.

Despite these serious obstacles and questions, open science keeps moving forward. In all cases, acting professionally as an academic comes down to "connective professionalism." Your professional strength lies not so much in yourself as a professional, but in the connections you establish. This is something we are seeing in a variety of professional sectors, including healthcare, law enforcement, the justice system and education. [3-4] As the "old" Utrecht School demonstrates, this is not a novel phenomenon: Professors worked across the boundaries of their disciplines, connected students to society, and focused on "the person" rather than, for example, "the patient."

Furthermore, this development is reflected not only in the strategic ambitions of organizations such as Utrecht University and UMC Utrecht, but also in the education and training of professionals. It is becoming increasingly common, particularly among young people, to work on more than just academic research. In all faculties, there are impact-driven projects led by (young) researchers. We have (young) "open science fellows" and (young) colleagues who are tasked with delivering impact. Within our university, leaders play a crucial role in this process. It is up to them to channel and direct these impact ambitions effectively, for instance through performance and career discussions, and to translate them into more differentiated career paths. The latter is also an explicit element of the Recognition & Rewards program, which applies not only within Utrecht University and UMC Utrecht, but also nationally. [5]

In addition to these larger, time-consuming developments, there are smaller and more practical initiatives underway that make it easier to cross boundaries. We have new opportunities for impact-oriented applications, like those for science communication; new support for impact projects and impact development; career officers; impact awards; as well novel outreach canals like blogs, vlogs, and social media. Not everything has to be as large-scale as AKWAGLOT. Our impact awards showcase concrete projects by students and staff, such as law students advising prisoners and public administration staff working to reduce community illiteracy.

AKWAGLOT teaches us something specific about advancing societal impact. It is literally a platform – a "boundary object" in more theoretical terms [6] – that allows different worlds to interact. Initially, this occurs in a literal sense: When people are on the platform, "something happens." During the weekly GLOTcast recordings, for example, citizens sit down with scientists and students. This sparks meaningful conversations, raises unexpected topics, and lets people share real experiences – especially because people experience firsthand that such interactions are possible. The object "makes things happen," shaping the feeling, the ambiance, and the tone of the conversation.

In a more figurative sense, the lesson is that we must use boundary objects and boundary language to advance connections, dialogues, and discussions. We need "in-between zones" that signal our desire to work differently. This is possible in other places as well, not just in a temporary, purpose-built space like AKWAGLOT. It can happen in neighborhoods, in asylum seeker centers (as some of our researchers facilitated with "Plan Einstein" at a center on Einsteindreef in Utrecht), in schools, at TivoliVredenburg, or in the Neude library. As demonstrated by The New Utrecht School, it can even take place in the concert hall of the Conservatorium. By combining content, reflection, and culture, and by selecting the right approach – the "story" – using appropriate terminology, meaningful engagement is achieved. Recently, for example, The New Utrecht School held a public dialogue on the subject of "uncertainty," a term that resonates across various fields, prompts people to

share their own experiences, and allows for meaningful conversations. We can explore this further; compelling objects, such as AKWAGLOT and Skyscraper, can support this process. They encourage the audience to consider: "What effect does this artwork have on me?" and "what emotions or thoughts does it evoke?"

Appealing language and stories help just as much, along with formats like podcasts or discussion "cafes." Of course, we also need "boundary spanners" – boundary figures who shape and maintain connections. They can be inspiring scientists, as well as support staff, managers, and professionals, with personal experience crossing boundaries and a willingness to share it. The goal is not merely to *discuss* connections, but to *establish* them. This remains essential for the continued growth of The New Utrecht School.

Conclusion

Modern efforts to open up science, connect the inside and the outside, and create in-between zones are examples of transitional processes. Science and academic professionalism are "in transition." This partly explains why these efforts involve new approaches, methods, and terminology, and why they proceed through trial and error and the occasional "hassle."

The challenge is to preserve traditions and core values, including those of the Utrecht School, while also adapting them to new contexts. The New Utrecht School contributes to this – not only by connecting health and healthcare to art and culture to better understand society, the patient as a citizen, and social environments, but also by exploring *how* these perspectives are formed. While The New Utrecht School engages in conversations about health, citizens, and community life, it also reflects on how to structure these conversations – dialogues that span boundaries.

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14

Vignette: The joy of learning

Silvester Beelen and
Sebastian Bok

The joy of learning

When new students embark on their unique journey, the critical job of educators begins immediately; creating an environment in which students can develop and grow. People may think there is great difference in the wide range of degrees at Utrecht, however they all share essential elements. Learning objectives can only be reached when students feel safe to make mistakes and continue collaborating with each other to learn from it. No feeling of shame, just a genuine empathy for one another and a passion to improve as a group. Why can it be so hard to achieve this environment? Let us dive into this topic.

Students are eager to learn, to accomplish their dreams, to change the world, and make a difference for people. Luckily, because we badly need them in these times. Large numbers of challenges await us, which will ultimately fall on the shoulders of a younger generation. There is nothing better than utilizing their intrinsic motivation in facing the upcoming decades. Numerous solutions are within reach, some subtle and others far-reaching. It is amazing to see the spark in the eyes of our students when they are passionate about making this hopeful future a reality.

Nevertheless, we can also observe something else happening. An increasing number of students drop out, need professional help, or sound the alarm. The spark in their eyes extinguished, at least for now. Can we blame them? The world can be heartbreaking, basic values and norms are rewritten in record pace before their eyes, and they watch helplessly. Currently, most of our role models do not admit to mistakes they made. Reinforcing the notion that we magnify our differences instead of highlighting all that we share. Resulting in a highly stressed individualistic society where the shared point on the horizon can be seen no longer. Perhaps we should stop running towards an unknown destination alone and instead discover it together.

That point on the horizon is still there, but where have we gone? It is time to stir up intrinsic motivation once more. We too need creative adaptive experts who challenge the daily changing world around us. How do we do this better than by focusing on cooperation and genuine connection? The New Utrecht School promises an answer to the outdated compartementalised thinking. The first outlines of new educational innovations are beginning to take shape, to place in the new curricula. Challenges, new partnerships, and fresh ways to foster a broad view of healthcare. No, it is not immediately implemented flawlessly. However, lessons are learned from the newly implemented courses. We make mistakes to learn from them, for it is no shame to make one.

We have the opportunity to cherish the joy of learning (and teaching). Ultimately, we all want the same thing: a resilient group of graduated students who can make the difference.

A group where we can be proud of, about whom we might even say, “Hey, that’s a typical Utrecht student.” We are well on our way to this goal. Although it is still essential to ensure that all the new initiatives are properly implemented. There is a risk that the new curricula will become too crowded, while students and teachers can only be creative when there is time. On behalf of all students, we appeal to all faculty to allow this time. Time for collaboration, for creating a safe environment, and for reflecting on mistakes made to improve.

We look forward to it, for we know it is possible.

PART III

Critical thinkers for Open Science

15

Vignette: Science as a process of trial and error: A student-initiated Open Science initiative in The New Utrecht School

Stefan Gaillard, Alex Visser and Maura Burke

Science as a process of trial & error: A student-initiated Open Science initiative of The New Utrecht School

The *Journal of Trial and Error* (https://journal.trialanderror.org/) and The New Utrecht School organize a series of open dialogues to discuss failure and uncertainty in healthcare. In addition, they join forces to publish a special journal issue that demonstrates to students that mistakes are an inseparable part of the scientific process. The issue emphasizes that every methodologically sound study is valuable research, even if it does not yield positive results.

A scientific journal that publishes research that is not perfect – where mistakes have been made, unexpected results have been obtained, or telling why a study has failed entirely. That was the idea behind the *Journal of Trial and Error*, a journal established in 2018 by three *History & Philosophy of Science* students after a visit to a symposium on *Open Access*. "It's great that published research is made accessible, but what about the studies that never get published at all?" they wondered. Therefore they established a journal dedicated to publishing research that would otherwise never see the light of day – research where mistakes were made, unexpected results were obtained, or where a study failed entirely.

"Therefore, for those readers who are skeptical of our project from the outset, we ask that you think of us not (only) as scientific rabble-rousers, but as devotees of science: science as it is practiced; that is to say, all science." – Passage from the editorial of the first issue of the *Journal of Trial and Error.* [1 p. 1]

After some initial hurdles, articles started to come in slowly. Although academics were enthusiastic about the idea, they were often reluctant to submit their own work. They were concerned that openly admitting to mistakes or failed projects could harm their careers. As long as the academic culture remains the same, changing the publication mindset is challenging. This raised a new question: how can we foster an open, meaningful space where staff and students feel both safe and valued, and where a safe learning environment naturally extends into a safe workplace? Such an environment would foster a culture in which it is widely acknowledged that everyone makes mistakes and that nothing is ever perfect. To create a more holistic and inclusive academic culture, it is essential to create a space where members of the academic community can come together and share examples of trial and error in their professional lives.

Creating a safe learning and working environment necessarily involves establishing an open space where the trials and struggles of research can be shared without fear of rejection.

To establish such an environment, the *Journal of Trial and Error* and The New Utrecht School jointly organize a series of open dialogues in which senior staff members are invited to share their experiences of trial and error with the academic community. These presentations are put in a wider context of failure, integrity, and academic culture. After the presentations, students and staff have the opportunity to participate in an open discussion, moderated by representatives from the *Journal of Trial and Error* and The New Utrecht School.

In addition to these dialogues, participating staff members – many of them authors of this publication – are invited to publish negative results, as well as studies containing errors, in a special issue of the *Journal of Trial and Error,* fully peer-reviewed and openly accessible. This allows staff to share significant and valuable research that has so far remained unpublished. The special issue will comprise contributions from medical specialists, accompanied by commentaries from the social and humanities sciences, as well as from patients and students. This setup demonstrates that we all have a role within open science.

The *Journal of Trial and Error*, a project carried out primarily by bachelor, master, and PhD students, demonstrates that interdisciplinary student initiatives (of which this is just one example) can make a substantive contribution to the pillars of The New Utrecht School, and to a new, open, and joyous approach to science.

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Image: The original team behind JOTE.

16

Vignette: Inter- and transdisciplinarity in Utrecht: Collaboration with an open mind

Leoniek Wijngaards

Inter- and transdisciplinarity in Utrecht: Collaboration with an open mind

The New Utrecht School, Open Education, and the current Utrecht education model share a commitment to inter- and transdisciplinarity, an open-minded attitude towards other ideas and partners, and the formation of the student as both a reflective person and a developing professional. Each emphasizes the integration of education, research, and societal impact rather than treating them as separate domains; they promote habits such as dialogue, self-reflection, and a growth mindset in which trial and error are integral to learning. In practice, this means a solid disciplinary foundation combined with the ability to work across boundaries, ethical reflection that informs action, and openness in collaboration, methods and data.

These frameworks guide how we work within the Faculty of Social and Behavioral Sciences. Much of our work takes place in practice-based contexts such as clinical settings, schools, ministries, municipalities, neighborhoods and hospitals. By engaging directly with such real-world contexts, students learn in authentic settings. We strive for inter- and transdisciplinary collaboration because many societal and academic questions cannot be addressed within a single field. Their complexity and urgency call for perspectives that not only complement but also challenge each other. For this reason, we frequently collaborate across faculties to bring in the broader perspective such challenges require.

The collaborations within the university's strategic themes are good examples for the way we approach this. Dynamics of Youth binds all faculties, and the strategic themes show that the interfaculty approach works: networks form, problems are tackled across disciplines, and students are trained to do the same. One great example is the partnership between the Faculties of Social and Behavioral Sciences, Medical Sciences, and Veterinary Medicine to study child and adolescent development. Veterinary experts contribute new insights from their research on animal behavior, while social scientists focus on children, families, schools, and inclusive development. Clinicians contribute their insights on illness, care, and well-being. Together, these interdisciplinary perspectives provide clearer, practical insights into what shapes the development of young people and what we can do to improve their opportunities. The strategic themes also connect where key societal challenges intersect. For example, Dynamics of Youth and Pathways to Sustainability collaborate to address young people's climate anxieties and their role in shaping sustainable futures. By linking youth wellbeing with environmental responsibility, these collaborations contribute to building a healthy planet for current and future generations. The point is to transcend the separate disciplinary silos to find the right combinations for the question at hand. While beginning from within the health-domain, The New Utrecht School – as a framework which conceptualizes education in its inseparable connection to research, practice and society – is a movement which will not only work well within the context of the UMC Utrecht, but clearly fits Utrecht University and the Utrecht education model well.

17

Adaptive expertise of professionals: Navigating growth and development in times of uncertainty

Marieke van der Schaaf

Summary

Continuous changes and complex challenges in the professional work environment require a shift in how, and for what purpose, we educate future professionals. This chapter describes that learning to flexibly cope with continuously changing professional work environment amounts to the development of adaptive expertise. This lies at the heart of The New Utrecht School. The underlying vision on learning was already evident in the period of the (historic) Utrecht School, in which the individual construction of meaning in relation to the environment was central. We illustrate this with an example of an interventional radiologist who allows her actions to be shaped by the environment.

Adaptive expertise of professionals: Navigating growth and development in times of uncertainty

Working in times of uncertainty requires the integration of professional expertise, research, and education

Change is the only constant in today's professional work environment. Societal, technological, demographic, and labor market developments contribute to increasing levels of unpredictability within the organizations and contexts in which professionals operate. As a result, professionals are increasingly confronted with unstructured and complex work situations and challenges, also known as "wicked" problems. [1] These are open-ended challenges with significant practical implications that often require multidisciplinary solutions. Examples include the COVID-19 pandemic, chronic staff shortages, social inequality, and the impacts of climate change. Work environments are becoming more complex as well. Tasks are more varied, the pace is faster, the field is more international and interprofessional, and higher levels of knowledge are expected. One example is the growing emphasis on disease prevention, decrease in duration and amount of hospital stays, and person-centered care delivered in the community. [2] For healthcare professionals, this means developing a better understanding of patients' perspectives and living environments, working together with professionals from other disciplines within a patient-centered network, and employing new technologies. Professionals need to be able to navigate between different perspectives from patients, other disciplines, and colleagues – a practice commonly referred to as boundary crossing. [3]

In order to thrive within these evolving work environments, professionals need to: a) be able to connect the expertise within their profession to the surrounding environment (including the people in it); b) be familiar with the latest insights and innovations from research; and c) continuously develop themselves through education and training relevant to their work context. Professional expertise comes from the field itself, and research helps drive innovation. Education and training support learning on-the-job and the development of (future) professionals, that are experts in their own field or discipline as well as being prepared to work in flexible and adaptive ways. Profession, research, and education are interconnected (see Figure 1). To keep this connection tight, it is important to create a work environment where (future) professionals can develop and grow. At the same time, professionals help shape that environment themselves. These dynamics together reflect what is known as professional agency. [4]

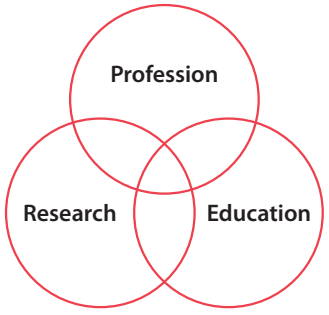

Figure 1: Connecting profession, research, and education.

Development of adaptive professionals

Relying solely on standard operating procedures and a purely technical-rational approach is not enough to deal with continuously complex situations. Professionals need a moral compass and the ability to navigate complex social situations, which requires intellectual, psychomotor, and (inter)personal knowledge and skills. They must tolerate ambiguity and be capable of deliberately deciding when to act – or refrain from acting – during uncertain situations, based on the opportunities in a specific environment. [5] This is commonly referred to as adaptive expertise. Professionals with adaptive expertise can approach new challenges creatively and flexibly, have a conceptual understanding of the situation based on substantive knowledge, and are open to change. They possess a substantial degree of resilience, self-regulation, and self-awareness. [6–9]

In order to clarify what is required of professionals, it is useful to distinguish between adaptive expertise and routine expertise. [10] Routine expertise works well in stable, predictable settings, where tasks are guided by protocols and standard procedures. Such expertise can be cultivated through deliberate practice under the supervision of an experienced mentor, and further strengthened through feedback, reflection, and repetition. This process is also referred to as *deliberate practice*. [11] In practice, people carry out the tasks exactly as they were trained. Experts are able to perform these tasks quickly and effectively because their routines are automated, which sets them apart from beginners.

Adaptive expertise builds upon routine expertise and equips professionals to effectively address novel and complex challenges in dynamic or unpredictable environments, including situations that involve high pressure or extreme conditions. Adaptive professionals combine efficiency with innovation in their work. They possess not only an understanding of whether a particular routine is effective in a specific context and how to apply it, but also have an insight in when and why it is effective. This deeper understanding enables them to adapt more effectively to changing circumstances. Various studies on adaptive expertise have shown that, in addition to knowledge and procedural skills – typical for routine expertise – processes such as deliberate planning, monitoring, communication, and the coordination of these activities are essential components for flexibly addressing complex challenges. [6]

To develop adaptive expertise, professionals should be given tasks that are slightly beyond their current abilities, which they can handle with the support of a more experienced person, such as a supervisor. In other words, these tasks should fall within their zone of proximal development, a concept also referred to as the "adaptability corridor" (see Figure 2). [12] After all, giving a complex, innovative task to a beginner can lead to frustration, while assigning routine tasks to an experienced professional may only strengthen existing habits.

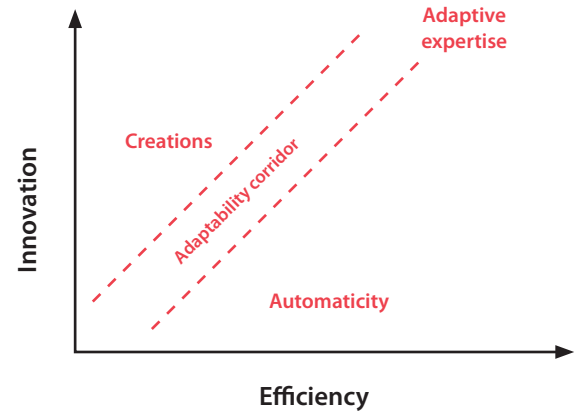

Figure 2: Adaptability corridor (adapted from Bransford et al. [12])

In line with this idea, several studies describe training principles that promote the development of adaptive expertise in learning environments. [6–9, 13–14] In short, it involves: frequent practice with feedback and active reflection on experiences and the self, developing multidisciplinary experience through working on diverse complex cases in various situations and contexts, and tailored support from a mentor or supervisor. A safe learning environment within the organization is crucial, along with transformational leadership and a climate that encourages innovation. Such environments provide "a climate in which the learner feels valued and at ease, yet is able to speak up and take risks without fear of retaliation, shame, judgment, or consequences for themselves or others, thereby fostering learning and innovation". [15, p. 49]

Mastering adaptive expertise

Adaptive expertise, or "learning," is always developed through interaction. This includes interaction between the professional and their (work) environment, as well as with others, such as patients and colleagues. From an ontological and epistemological perspective, there is no single reality that exists. Instead, "reality" is constructed through the meaning that an individual assigns to their environment. Professionals constantly make associations

or connections between what they think (their cognitions) and what they experience (for example, what they observe in the environment). This socio-constructivist view of learning is in line with the philosophy of the historical Utrecht School, where personal interpretation of the environment is central[16]. In practice, this means that the way professionals observe and make sense of their surroundings is essential and is guided by: a) existing knowledge and beliefs (after all, you see what you think you see) and b) sensory experience (embodied cognition). Sensemaking is the effort to experience and understand events, which is often triggered by unexpected circumstances that enable us to view situations in a new way, leading us to question and revise previous interpretations by making sense of "cues" from the environment – such as feedback or affordances[1] – our expectations and understanding are reinforced. This enables us to better identify problems, which in turn guides the development of strategies for solutions. [19]

Clearly, a purely cognitive-psychological view of learning is too one-sided. Expertise development does not occur solely through the accumulation of knowledge in the mind (cognitions), nor is it simply a representation of an existing external reality. First, cognitions are always a human construction and interpretation rather than an objective reflection of reality. Second, it is a bodily process that cannot be separated from "the mind". [20-21] Anyone who has learned to ride a bicycle or play a musical instrument will recognize that this requires more than a purely cognitive process. The body is capable of processing and retaining knowledge and skills – a phenomenon that cannot easily be explained. Even tasks that are traditionally considered to be purely cognitive, such as mathematical operations, conscious analysis and diagnosis, are demonstrably physical processes. [22-25] Learning is embodied and takes place through the senses. In line with the perspective of both the historical and The New Utrecht School, mind and body cannot be separated in a Descartian way. Instead, the development of expertise can be understood as a dynamic system, linked to the body and its actions, in which meaning is constructed and reality is shaped through processes of sensemaking.

This perspective on learning, which emphasizes the development of adaptive expertise, implies that education must offer opportunities for discovery, practice, and refinement through sensory engagement. Learning occurs not only in a "deductive" manner, through the application of acquired knowledge, but also in an "inductive" manner, in which individuals first engage in action – for example, through psychomotor activity in the environment. [26-27] To illustrate this, we describe the actions of interventional radiologist Irene.

1 These potential connections between the professional as a person and their environment are also referred to as affordances. [17-18] An affordance provides the professional with a possible course of action as perceived by the individual professional. Its properties exist in the professional's perception, at the right moment, and may vary for another person. An environment with affordances enables the discovery of relevant information and structures, which begins with observations through the senses.

Irene is going to place a drain in a patient's swollen kidney due to a compromised outflow. Before starting the procedure, she informed the patient of what to expect and conducted a general assessment, which involved closely observing the patient and asking questions. Irene checks the patient's anxiety, how the illness is perceived, the presence of any language barriers, and the ability to understand and follow instructions from her and the nursing staff. Irene also explains the importance of effective communication between herself, the nurse, and the patient. For instance, the patient will need to indicate verbally whether the treatment is painful, as the doctor cannot interpret the patient's non-verbal cues during the procedure while focusing on a screen showing the kidney. The patient must also let the her know if the position on the treatment table it is no longer comfortable. When placing the drain, breathing instructions are also important. The patient must breathe in deeply, hold their breath and exhale when the doctor asks them to, because positioning of the drain is guided by the patient's breathing rhythm. Effective cooperation between the patient, doctor and nurse is essential in all these situations.

Image 1: The interventional radiologist lets the ultrasound images guide her actions.

Dr. Irene inserts the drain using the information she obtains from the ultrasound images. Of course, she cannot touch the kidney directly. This is why she visualizes the intra-abdominal situation and then plans how to insert the drain into the kidney. She organizes (plans) and performs the punctures based on the information she obtains from the ultrasound and her experience of how the kidney tissue feels when you puncture it. Meanwhile, she takes the patient's breathing rhythm into account, as this affects the movement of the kidney. This imagined "gestalt" of the kidney, together with her knowledge of how the tissue feels and the patient's breathing pattern, helps her with the physical task of inserting the drain.

The procedure is carried out within a team whose members understand their respective tasks and responsibilities and work together towards a shared goal. The team works well together in both stable situations, where procedures proceed smoothly, and in acute settings, where a patient's life may be at risk. When a stressful situation arises in which the procedure does not run smoothly, for example in the event of bleeding or a severe allergic reaction of the patient, it is important that each team member remains aware of their role and position and works seamlessly together. In such situations, Irene takes the lead. She will assess the risk and instruct the nurses and laboratory technicians to administer medication to the patient or call colleagues from the anesthesia department to stabilize the patient.

In the example above, the ultrasound serves as an important affordance for the medical specialist, providing her with an inviting opportunity to act based on her knowledge and perception (sensemaking) of the environment. In the same way that a chair invites us to sit and a door handle invites us to open the door, the ultrasound provides her with an affordance to act, assess the situation, and choose the best next steps. For her, perception and action work together seamlessly. [17-18]

Image 2: The interventional radiologist inserts a drain into a patient's kidney.

The learning/work context as an open learning system

A characteristic of adaptive experts is that they seek to develop new concepts and methods for addressing unfamiliar problems, while drawing on sensemaking. This means that, in addition to developing a knowledge base, (future) professionals should be given opportunities to explore, practice, and refine their senses. Attention to embodied cognition is important in this context, as is interprofessional and multidisciplinary teamwork. Some examples of how these principles can be, and are, implemented in educational settings include:

- having students from different disciplines collaboratively solve real-life wicked problems, didactically supported through challenge-based learning;
- patient participation, where all medical students take courses in which they learn to adopt different perspectives and to learn from feedback provided by real patients and clients;
- enabling students from two or more professions to develop interprofessional skills, for example through interdisciplinary team projects; [28]
- multidisciplinary pathways for clinical workplace education, in which instructors and supervisors learn to complement their teaching practice with on-the-job learning. Additionally, they learn alongside healthcare professionals from other specialties at various hospital workplaces.

The implementation of such learning/work environments requires fundamental decisions about how and for what purpose we educate and train professionals, as well as how we foster learning cultures that promote development (see also [29-30]). The work environment of professionals, in which they learn and work, is by definition an "open system" with the professional as the actor. For this reason, every education system should also be considered an open system, fully interacting with its environment.

This starts with finding a better balance between the objectives of education and training for novice and advanced clinical and research professionals, and reflecting on these objectives. Education serves three functions. [31] The first is qualification. Knowledge and skills are developed to meet the requirements for a profession. Second, it serves a socialization purpose. Participating in a community and developing the values and attitudes necessary for social interaction and professional practice. The third function, subjectification, is aimed at personal and identity development. What kind of healthcare professional do I want to be, and what kind can I become? Education has traditionally focused heavily on qualification. Professionals can reach their full potential only when the three functions are more balanced. This calls for a more inclusive learning environment with flexible training pathways that include personalized learning goals and greater interprofessional on-the-job learning throughout a professional's career.

Conclusion

The New Utrecht School's core focus is on developing adaptive professionals who are experts in their field and able to deal with change efficiently and innovatively. Developing adaptive professionals requires an educational approach that emphasizes not only knowledge and skill acquisition but also self-reflection, learning from patients and clients, interprofessional feedback, boundary-crossing, exploration, and practice in complex situations under supervisory guidance, sensory engagement, and multidisciplinarity. This calls for a cultural change in the learning and working environment, emphasizing socialization and personal growth alongside educational qualifications. Such a significant cultural shift requires a change in mindset among managers and staff. They act as role models in interprofessional collaboration and in providing a safe and inclusive learning environment.

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18

Vignette: The importance and necessity of interdisciplinary collaboration in The New Utrecht School for the Faculty of Veterinary Medicine

Debbie Jaarsma

The importance and necessity of interdisciplinary collaboration in The New Utrecht School for the Faculty of Veterinary Medicine

Interdisciplinary collaboration is vital for the Faculty of Veterinary Medicine to drive knowledge advancement. The Faculty of Veterinary Medicine already has extensive experience in this area, for example on topics such as *One Health* and *One Medicine*, which emphasize the interconnectedness of animal, human, and environmental health. Certain issues can only be effectively tackled by integrating expertise and methods from multiple disciplines. Consider, for example, research into the relationship between the health and well-being of animals and humans in infectious diseases such as Q fever and COVID-19.

Interdisciplinarity benefits not only research but also education. At Utrecht University, this is reflected in the introduction of the new Zorg, Gezondheid en Samenleving (Care, Health, and Society, ZGS) Bachelor's program. This unique program is developed by the Faculties of Veterinary Medicine, Medical Sciences, and Science (with a strong contribution from Pharmacy). The program offers students the opportunity to learn from a variety of perspectives and backgrounds, giving them a wide range of knowledge, insights, and skills.

Despite the many advantages of interdisciplinary research and education, we must also be aware that this will inevitably come with certain "growing pains." At the start of interdisciplinary collaborations, misunderstandings often arise, as terms, definitions, and concepts are often applied differently across disciplines. In addition, some faculty members express concern that students in broad bachelor's programs may not acquire the depth of specialized knowledge required for subsequent master's studies.

Such obstacles are by no means impossible to overcome. At the Faculty of Veterinary Medicine, the focus is on innovative solutions. The question is not whether interdisciplinarity can work, but how it works, for whom it works, and why it works under specific circumstances. By studying and aligning different forms of education more closely, we can ensure that knowledge gained outside of veterinary medicine enriches our students' training.

In the future, sustainability will remain an issue that must be addressed through an interdisciplinary approach. It is no coincidence that *Pathways to Sustainability* is one of Utrecht University's four strategic themes. Within veterinary medicine, topics such as circular agriculture and the sustainability of material flows for large clinics are central concerns.

We cannot tackle all problems at once, which is precisely why collaboration is so important. Together, we can work more effectively and efficiently.

The New Utrecht School demonstrates the added value of interdisciplinary collaboration. By involving artists, philosophers, and scientists from a wide range of discipline – as well as other societal stakeholders – this school offers a fresh perspective and a different way of looking at things: at research and education, but also at life in a broader sense. Academics are not only scholars but also individuals shaped by their personal and social contexts. That is also the beauty of the public dialogues organized by The New Utrecht School, where the boundaries between speakers and audience become blurred. A speaker can simultaneously be a parent, a professional with experience of care, or a layperson in relation to another speaker's area of expertise. In a similar way, successful interdisciplinary collaboration dissolves the boundaries between disciplines, fostering an environment in which Utrecht's scientific community can progress more rapidly and effectively.

19

Bridging the gap between fundamental research, practice, and society: Examples from education

Niels Bovenschen and
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Summary

Training future health professionals primarily involves equipping them with the knowledge and skills essential for the 21st century. Central to this effort is collaboration across disciplines, which is crucial for translating the outcomes of basic scientific research into effective clinical and societal applications. At the same time, contemporary issues – such as those raised by patients and patient organizations – must be integrated into innovative educational formats to ensure that students learn in the context of real-world challenges. This chapter provides various examples of how "challenge-based learning" activities are applied in medical and biomedical science programs to enhance students' knowledge and interdisciplinary skills.

Bridging the gap between fundamental research, practice, and society: Examples from education

The Utrecht School in the 1950s and 1960s was based on three key pillars: 1) the human being should be regarded as a unique individual, consisting of a complex whole that includes both the body and the context in which the individual lives; 2) a scientific perspective that emphasizes collaboration across disciplines; and 3) practice and real-life experience serve as a crucial learning environment for educating future professionals (see Drost, this publication).

These pillars remain highly relevant today in both healthcare and the education of health professionals, and their importance appears to be increasing in recent years. We cannot treat people as if they were all the same when it comes to understanding and treating diseases. Today's patient must be viewed as a combination of body and context, including personality, gender, culture, subjective experiences, and social interactions. This requires an interdisciplinary approach from health and disease professionals: disciplines such as medicine, psychology, sociology and science, as well as economics and politics, each contribute to our understanding of health and disease from their own perspective. To achieve meaningful progress in healthcare, these disciplines must not only coexist but actively engage with and embrace each other's expertise.

The image of doctors and scientists working from an ivory tower is now a thing of the past. Patients are becoming more empowered, and medical information is widely accessible. Today, treatment plans are often developed collaboratively between doctors and patients. In biomedical science, researchers are similarly encouraged to actively involve society in their research. At Utrecht University, this dialogue between science and society is facilitated through the Public Engagement program. [1] The societal relevance of (biomedical) research is increasingly considered a central criterion in its evaluation. [2] While the cornerstone of biomedical science remains advancing knowledge of how the body functions and malfunctions, the research question must also fit into the wider societal context. Specifically, how can the results of fundamental research be applied to diseases and their treatment? This is known as the so-called "from bench to bedside" principle. [3]

We can conclude that healthcare and science require disciplinary experts who can identify gaps within their own field and address them in collaboration with other disciplines, working together to tackle (complex) challenges. These developments raise important questions for the design of our education system. Training future health professionals

entails equipping them with the specific knowledge and skills essential for the 21st century. This includes collaboration, problem-solving abilities, and the application of IT and other technologies. [4]

A large part of this training takes place in a practical learning environment, which is one of the Utrecht School's core principles. The programs at the Faculty of Medical Sciences devote considerable time to practical experience. Students intern with a doctor or participate in scientific research. Students' responsibilities are gradually increased, so that by the end of their program, they are ready to enter the workforce independently. In addition to these existing internships, contemporary real-world issues are also integrated into other forms of education, enabling students to learn through practical, real-life examples. A method well suited for this is "challenge-based learning." This educational approach immerses students in interdisciplinary settings, challenging them to address complex, real-world problems for which no established solutions currently exist. Students learn to apply their disciplinary expertise to contemporary challenges in a supportive learning environment, while also developing their generic skills. [5]

An illustrative example of this educational approach can be found in the linked Bachelor's programs Pathology [6] and Experimental Translational Medicine [7] within the Biomedical Sciences and Medical Sciences curricula. These programs show how patients can serve as catalysts, creating synergy between research, patient care, society, and education, with the ultimate goal of helping patients. [8] Bachelor students in Biomedical Sciences and Medical Sciences (100–150 students) come together in the lecture hall, where patients, treating physicians, and researchers present a biomedical problem. Patient organizations and foundations also participate in the process. New student-groups, for example from clinical health sciences and the medical humanities, are continuously included. The disease being addressed changes each year and involves a condition for which there is currently no effective diagnosis or treatment. Students work in mixed subgroups of six, combining diverse disciplinary backgrounds, to explore potential solutions that can be tested in the laboratory over the course of several weeks.

The best proposal that emerges from this think tank of the Pathology [6] course is then adopted by another course later on in the academic year: Experimental Translational Medicine. [5] The most promising proposal emerging from the Pathology think tank is subsequently adopted by the Experimental Translational Medicine course later in the academic year. [8-9] In this elective course, bachelor students in Biomedical Sciences and Medicine collaborate in the laboratory to carry out the research. [10–11] This well-equipped facility, located at the heart of the Faculty of Medical Sciences/UMC Utrecht, is specifically designed for bachelor students and maintains close connections with researchers, physicians, diagnostic laboratories, patients, and other stakeholders. Due to financial contributions from patient organizations and foundations, bachelor students have been able to successfully carry out their research during this course. [12–13] The challenge-based learning models – from think tank to actual implementation – fosters collaboration among Biomedical Sciences students, Medical Sciences students, patients, physicians, and researchers across disciplinary boundaries. It motivates students to collaborate with patients and stakeholders, inspiring them as they work together to solve a real societal problem. Students learn by doing, by collaborating across disciplines, by learning from role models, and by tackling truly socially relevant problems – this is the essence of The New Utrecht School.

Looking ahead, the program will expand to include contributors from beyond the (bio) medical field, such as chemists, economists, and social scientists, creating even richer interdisciplinary collaboration. [14] Examples of recently developed interdisciplinary educational programs include the Master's program Medical Humanities (combining humanities and medical disciplines) [15] and the European Master's program CHARM-EU, in which diverse disciplines from different European universities collaborate transdisciplinarily to address major global challenges. [16] Ultimately, an interdisciplinary approach is necessary to effectively translate the outcomes of basic scientific research to patients and society. [17]

Image: Patient involvement in the Bachelor's "Pathology" program. Source: Drost et al., 2019 [8]

In the master's programs at Utrecht University, challenge-based learning is taken a step further, maintaining a strong focus on healthcare problems as experienced by patients and/or identified by physicians. In the BITT* project, master's students work together to develop a concept that addresses a patient's problem, in consultation with their treating physician. The project is embedded within a collaborative alliance between Eindhoven University of Technology, Wageningen University & Research, Utrecht University, and the UMC Utrecht, with students and faculty from all four institutions actively participating. [18] The BITT project brings together four disciplines: Medical and Biomedical Sciences students from Utrecht, nutrition and health experts from Wageningen, and biomedical engineers from Eindhoven. They learn from each other's ways of thinking and perspectives on both the problem and potential solutions. As the project runs alongside their regular coursework, students are additionally challenged to develop skills in remote collaboration and project management.

Throughout the project, the group maintains contact with key stakeholders, such as the physician and the patient. Students also seek out experts who can help them to better understand the problem or improve their conceptual solution. The greatest learning benefit lies in the process the students go through: interdisciplinary collaboration and the involvement of individuals who are directly affected by the problem or concept. An added bonus is the surprising and innovative ideas that the students generate. In some cases, this has led to further developments, such as internships, research proposals or interest from external parties in adopting the concept.

Another example of challenge-based learning in the master's program is the Translational Life Sciences module, [19] a six-month course designed for master's students with a Life Sciences background. A set of complex societal challenges from both hospitals and industry serves as the starting point of the module. Students work in small groups, focusing on a single challenge throughout the six-month period. In the first phase, students thoroughly analyze the problem to get to its core. From this core, the students develop potential solutions. To encourage innovation, the module initially emphasizes creativity and idea generation, without immediately assessing feasibility. All ideas are then assessed to determine the most feasible and effective concept. In the final phase of the module, students begin to develop their concept, ensuring that they produce something tangible: a prototype, application, or research proposal.

Throughout the three phases, students participate in various workshops that are relevant at the time, such as those on mapping the stakeholder landscape, communicating with third parties, and organizing creative sessions. There are also workshops on entrepreneurship and financial planning to enable students to implement their concept sustainably.

A unifying thread throughout the module is the focus on students' personal development and self-reflection. The instructor takes on a coaching role, while students provide each other with constructive feedback through peer reflection and evaluation sessions.

Students who have taken one or more of the above courses report very positive experiences. They appreciate the responsibility and ownership they have over their projects, and this combination of personal accountability and engagement with real-world problems clearly enhances their intrinsic motivation. At the same time, these courses demand a great deal from them. Students venture into uncharted territory where neither they nor their instructor knows where the solution lies. They navigate a path of dead ends, pitfalls and summits, with the occasional milestone along the way. Along that same path, one can observe growth in passion, innovation, and appreciation for each other's expertise and perspectives. The student learns to navigate this learning journey, and the structure of the program must provide safety and support throughout the process.

> "To conclude, in the future I would try to understand and also ask about others' perspectives. Inquiring with others and adapting to seeing things through their 'pair of glasses' would have helped take away from some of the challenges of groupwork. I think the real end product of this course wasn't so much the poster or the video that we made, as it were the memories and experiences that will stick with me throughout the rest of my career".
>
> *– Participant BITT project 2019 - 2020*

As the previous rector noted in his forward to the Dutch edition of this volume, educational innovations influence each other in different ways. This idea is also evident in educational fashions. The teachers of the historical Utrecht School taught us the importance of incorporating practical elements into the learning environment and of situating individuals or problems within their broader contexts. The current approach to education, as advocated by The New Utrecht School, puts this vision into a new framework with three key focal points: 1) different disciplines are brought together during the course of education program; 2) existing, urgent health challenges are placed at the center, with society actively involved; and 3) attention is given to developing generic skills expected of today's students in the 21st century.

As education professionals, we aim to bridge the gap between fundamental research, (healthcare) practice, and society – both now and in the future.

Bachelor Research Hub

In 2020, a physical (laboratory) space was established at UMC Utrecht and the Faculty of Medical Sciences, where bachelor students in Biomedical Sciences (BMS) and Medical Sciences (MED) at Utrecht University can conduct biomedical research together with researchers, physicians, patients, and other stakeholders. We call it the Bachelor Research Hub. Here, students implement their developed solutions to current challenges in the healthcare domain. This can be done within the Biomedical Sciences and Medicine curricula through laboratory courses and bachelor's thesis projects, as well as outside the curricula via summer schools and extracurricular research. The patient- and research-oriented educational concepts are based on tackling real problems (learning by doing), interdisciplinary/transdisciplinary learning (learning through collaboration), challenge-based learning (learning through authentic and relevant cases), and involving patients, researchers, and physicians (learning from role models). Education in the Bachelor Research Hub promotes students' academic and research skills, while creating synergy between education, research, patient care, patients, and society. Future expansion to additional locations within Utrecht University and other universities will establish unique and innovative networks of collaborative Research Hubs, fostering transdisciplinary connections across programs, faculties, and institutions, while actively engaging students in tackling global challenges.

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Vignette: Interdisciplinary paths to a resilient future

Annemarie van Wezel

Interdisciplinary paths to a resilient future

Utrecht has a long history of making science societally relevant and accessible, from the University Museum Utrecht to the Betweter Festival and Studium Generale. At the Faculty of Geosciences, we aim to continue this tradition through interdisciplinary collaboration and Open Science. We have strong interdisciplinary cooperations within the faculty, with geographers, Earth scientists, environmental scientists, and innovation and educational scholars already working closely together. The challenges we face do not stop at the borders of our faculty, however. To address pressing issues such as climate change, urbanisation, energy transitions, resource use, and the loss of diversity, we need interdisciplinary collaboration across all disciplines, as exemplified by The New Utrecht School.

Such collaborations benefit everyone involved. Our connection with the faculty of Social Sciences brings new insights on social geography and urban questions, with the faculty of Law, Economics and Governance on policy, regulation, and market design, and with the Faculty of Science on modelling, data, and the natural processes that shape our planet. Less obvious pairings are equally promising. With the faculty of Humanities we can study the loss of diversity in three linked forms – biodiversity, geodiversity, and cultural diversity – and ask what each can teach us about the others. From the faculties of Medical Sciences and Veterinary Medicine we learn about interprofessional education, how professionals collaborate effectively, and how to train students to do the same.

This culture of collaboration starts in education and is reinforced by example. Here, as with almost every topic, The New Utrecht School and the actualized Utrecht education model meet. Both emphasize challenge-based learning that asks students to engage real (societal) problems with stakeholders, while standing firmly on a strong disciplinary foundation and developing the capacity to work across fields where that adds insight and value.

Our approach to Open Science follows the same logic. We have made great progress: open access is now standard practice and most of our data is open. The challenge ahead is guidance and findability, helping people discover, understand and responsibly reuse what is already there. Openness also raises the question of digital sovereignty. In the current geopolitical climate, Europe should lead by combining an open attitude with the capabilities needed to avoid unnecessary dependence.

Geosciences contributes critical knowledge about resources and raw materials, supply chains, global critical interdependencies, and the transitions needed for a resilient, sustainable future. Rather than retreating to isolated islands, we choose to remain outward-looking and collaborative, building trustworthy infrastructures, sharing data, and partnering with society so that our research and education continue to matter. In this sense, collaboration within The New Utrecht School is a continuation of what Utrecht has always done well: rigorous science, accessible to many, grounded in strong disciplines, and enriched by working with others to meet the challenges of the future.

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Vignette: The New Utrecht School: A novel way of connecting people and practices

Monique van der Linden
and Marc Bonten

The New Utrecht School: A novel way of connecting people and practices

The New Utrecht School provides the foundation for our educational innovations, because innovation only works when it is coherent and guided by a clear vision that connects education, research, (clinical) practice, and impact. We see education as a unique motor for innovation: new practices we want to flourish in research often take root first in the classroom, where they can be tried, refined, and then naturally flow into research culture. That is why inter- and transdisciplinarity are at the heart of our approach. Questions such as medical misinformation demand collaboration across medicine, social sciences, ethics, communication, law, data science, and the arts, and they ask us to understand persons in their societal context rather than in isolation. The arts help us translate evidence into new forms that speak to lived experience; interprofessional training ensures that different expert cultures learn to work together; and a strong disciplinary base gives students and staff the rigor they need to contribute credibly. In this sense, The New Utrecht School is not only an educational concept but a way of connecting people and practices across Utrecht University, the HKU University of Arts Utrecht and the UMC Utrecht, so we are never working alone.

Open Science is the natural companion to – or driver of – this agenda. Making choices transparent, sharing data and methods responsibly, and engaging citizens early are essential when tackling contested topics like misinformation. The New Utrecht School helps us make these principles concrete in courses, research-based (educational) projects, and community partnerships, so openness in many different domains is something students and staff actively strive for and practice. At the same time, we must keep The New Utrecht School focused. It cannot carry every theme indefinitely; it needs sharp choices about what it champions. Some topics, such as Resilience and Wellbeing, should become so well embedded in our curricula that they no longer need to be promoted as separate banners, because they appear across our teaching by default. Others, like the already mentioned medical misinformation, are becoming more urgent and fit squarely within The New Utrecht School's ethos of interdisciplinary, interprofessional learning, and community engagement. Our health challenges show how this comes together in practice: education, research, and societal partners meet around a concrete problem, and students learn to build bridges while producing knowledge that truly matters.

PART IV

Creative problem solvers for complex challenges

22

The art of care and well-being... and of uncertainty

Nirav Christophe,
Heleen Jumelet and
Jos Schillings

Summary

The domains of health and art can be profoundly complementary, particularly when they embrace uncertainty as a healthy and generative guiding principle. Accepting and enduring uncertainty enables us to welcome new perspectives and voices. Only by integrating perspectives from different disciplines and domains can complex societal challenges be addressed. The transdisciplinary co-creation required for this purpose must be explored further as both a collaborative practice and a joint research methodology. Within such an approach, experiential orientation, narrativity, and a phenomenological approach – drawn from practice-based art research and education – combined with scientific methodologies, emerge as key conceptual foundations.

The art of care and well-being... and of uncertainty

> "Medicine is a science of uncertainty and an art of probability"
>
> *– William Osler, Canadian Physician 1849-1919 [1]*

The initial engagement between the University Medical Center Utrecht (UMC) and Utrecht University (UU) and the HKU University of the Arts Utrecht regarding inter-institutional collaboration in the field of health began with the 2016 article "Tolerating Uncertainty – The Next Medical Revolution", [2] in which the authors argued that recognition and acceptance of uncertainty is essential for doctors, nurses, patients, (bio)medical science, and for the entire healthcare system.

Why did academics from Utrecht University (UU) and the University Medical Center Utrecht (UMC) turn to the the (HKU) University of Arts Utrecht with this? Perhaps they suspected that, coming from the arts, we might have expertise in dealing with uncertainty? Perhaps they even intuited that the arts are indispensable when addressing this very theme. What they likely did not anticipate, however, was that we, in turn, would recognize ourselves in their account. Where the article spoke of care, we could just as easily read art.

Passionate conversations followed, which have continued ever since. From the very beginning, these interactions were characterized by mutual recognition and radical equality. For an artist, uncertainty is not just a daily part of the creative process, but a fundamental requirement for generating ideas and finding new solutions. It is only through uncertainty that it is possible to shift one's perspective and transform the way one perceives the world. [3]

This capacity is indispensable – not only for the creation of a painting or a piece of music, but equally for addressing the major challenges in healthcare and medicine in these uncertain times.

From the outset, the HKU found its natural place within The New Utrecht School – that interdisciplinary platform for urgent debate on the interplay between medical sciences, the arts and sciences, which closely mirrors the developmental processes of contemporary artists and designers. The professional practice of artists is becoming increasingly hybrid. Creative processes are becoming more and more diffuse and transdisciplinary. The

boundaries between disciplines, media and the domain of art and culture are no longer rigid. Art professionals in these fields continuously take on multiple roles and learn to navigate between them. By doing so, they become polyphonic, in the sense articulated by the Russian philosopher Bakhtin. [4] Technological developments and cross-disciplinary innovations require art professionals to recalibrate their creative strategies, and they demand from art schools a corresponding evolution in their pedagogical approaches. A compelling example of this is the project *If You Are Not There Where Are You*, developed by HKU in collaboration with documentary filmmaker Maartje Nevejan.

The transdisciplinary practice of the art professional appears to align seamlessly with the objectives of The New Utrecht School. The historical Utrecht School believed that an interdisciplinary approach was essential to understanding humans in all their complexity, and that it was necessary to look beyond the boundaries of individual scientific domains. In the present day, this awareness has taken on an even broader significance within The New Utrecht School. If we are to address contemporary societal challenges in healthcare, science and medicine, collaboration across all domains is essential, including those beyond the scientific sphere. This is what is referred to as transdisciplinary co-creation.

Research and teaching as commonly practiced in the arts – summarized under the term "artistic research" – place transdisciplinarity at the core of their methodology.
Georgios Papadopoulos and Zafos Xagoraris, from the School of Fine Arts in Athens, describe transdisciplinarity as more than just an attitude or noble aspiration; they see it as a methodology for practice and research.

"Transdisciplinarity is a methodology that cuts across disciplinary lines, across entire research fields – bringing the fields together in a new way, recreating a research paradigm anew. Transdisciplinarity as it is deployed in our teaching and research practices is linked to all these possibilities of cross-pollination, extending across and beyond theoretical fields, institutions, and their given practices, challenging established structures and methodologies through the linkage of heterogeneous elements." [5]

When we view transdisciplinary co-creation as a methodology, for example between the health domain on one hand and art on the other, how does such collaboration actually work?

A compelling example is the interdisciplinary workshop series *De Nieuwe Verbinding (The New Connection)* , conducted in 2021. The pandemic accelerated the shift from physical to virtual interactions, profoundly affecting the ways we connect with one another, both in healthcare and the arts. As communication is an essential aspect of human existence, it is only natural to pause and reflect on the way it has changed. The New Utrecht School organized a unique six-day workshop, bringing together medical students and students from various HKU programs to explore, investigate, and expand the boundaries of meaningful contact.

Under the co-teaching guidance of several inspiring artists and healthcare professionals, participants aimed to develop and enhance meaningful communication in virtual and hybrid environments.

The workshop was developed and organized by a small team of medical and HKU students, alumni, and professionals from the various institutions. It served as a pilot initiative and was extracurricular in nature. The workshop comprised six modules, each of which addressed different themes relating to physical and virtual communication: seeing/space; listening; embodiment; speaking/language; and co-creation. Table 1 provides a general overview.

Session	Element	Art form	Medical expertise
1	Bodiliness, Embodiment	Theatre	Rehabilitation Medicine
2	Listening	Music	Music Therapy
3	Speaking	Literature, writing	Pediatrics, (Medical) Research
4	Watching	Visual arts & Scenography	Fetal Medicine / Gynecology
5	Spaciality	Scenography	Psychomotic therapy
6	Communication	Combination	Combination

Table 1: overview of The New Connection (italicized) workshop modules

In the first session, theater artist Boukje Schweigman and rehabilitation physician Casper van Koppenhagen worked with a group of medical and HKU students to explore ways of experiencing, processing and articulating bodily sensations. The group explored the significance of their own and others' embodiment, and particularly how it is affected in the case of a (physical) impairment.

The core of transdisciplinary co-creation appears to lie in adopting multiple perspectives. In other words, it involves embracing the different voices within ourselves, such as the voice of the medical specialist, the voice of the individual experiencing their body through their senses, and the voices of uncertainty and ambiguity.

HKU has a long-standing tradition of educational and research projects related to health and well-being. Drawing on knowledge and methods from the arts and creative disciplines, we make a distinctive contribution to innovations in healthcare and to the personal and collective well-being of individuals – shaping how we care for ourselves, for one another, and for the world around us.

The human experience lies at the heart of our approach, whether we are considering the patient, the healthcare provider or any of the many other stakeholders within the healthcare and well-being landscape. This experience is not intended to be interpreted

psychologically or explained rationally in order to make a diagnosis. Rather, when approached phenomenologically, it has its own meaning, beauty and value – concepts that are indispensable to the creative artistic process. Within the fields of art and design, we are experts in creating meaningful experiences for others. We provide innovative solutions as a means to make the invisible perceptible and open for discussion.

An example of this is a project by The New Utrecht School, in which patient stories were interpreted musically. When it comes to stories about mental health disorders, diagnoses, the progression of the illness or medication often come to mind – but what about the patient's lived experience? Two students from the HKU Utrecht Conservatorium created a musical interpretation of two stories from the Verhalenbank Psychiatrie (Psychiatry Story Bank) for the Betweter festival. During the artistic process, the artists added new layers to the patients' stories. These layers could provide both patients and physicians with novel and surprising insights, and offer artists a fresh perspective on the impact their creative work can have.

Another outcome of this project unfolded as the audience listened to the music and were invited to create their own story based on their associations and emotions with it. The audience member attaches their own mental and emotional state to the music they hear, entering a kind of narrative mode and effectively becoming a creator themselves. With this creative stance comes the familiar feeling experienced when we, as an audience, are expected to engage actively: the feeling of uncertainty – the uncertainty of participating and the uncertainty of creating.

A new – more holistic – understanding of health offers novel opportunities for the arts to contribute to solutions in this area. We identify with a perspective that focuses equally on bodily functions, daily functioning, quality of life, mental well-being and purpose. [6]

Stories and their narration are essential in both healthcare and the arts. They demand imagination and visualization, and engage processes of development and growth. There is considerable expertise within the arts in transforming personal stories into meaningful experiences. Rather than focusing on the testimony itself, we prioritize finding an appropriate form through which the story can be shared. In doing so, new layers and meanings of the underlying experience emerge. Through stories, we make the invisible perceptible and open to discussion. Our aim is to help make healthcare more person-centered and, consequently, more effective.

In the fields of art and design, we ensure that people, disciplines and media are connected and brought together. We provide new and inspiring ways to collaborate, live and create together. Therefore, it is equally important for us to understand how people work and co-create in transdisciplinary situations. Sharing knowledge and experiences about the different ways of perceiving, experiencing, thinking, and being in the world.

The healthcare and arts sectors can mutually enrich each other when we collaborate and engage in scientific and artistic research grounded in a fundamental interest in human experience and the world in which it unfolds. This requires a shared vision of humans as relational, empathetic, performative and fluid beings, as well as an acceptance of uncertainty as a healthy and generative principle.

If you are not there where are you

"It's impossible to tell. You don't see it with your eyes; you see it as you think you see it." These words, the words of a teenager suffering from absence seizures emanate from the speakers of a radio-play installation. It is one of the artworks that emerged from a multi-year research project on representing experiences of absence.

What actually happens to children when they experience an absence seizure? Documentary filmmaker Maartje Nevejan, who herself suffered from absence seizures as a child, discussed the topic with numerous neurologists, epilepsy experts, the children themselves, and their parents. Her findings upended the widely held theory on absence seizures. "The assumption that absolutely nothing happens during these time-outs is incorrect," says Nevejan. "Children actually see, hear, and experience all sorts of things. An entire storybook passes before them. They often simply lack the words to describe what's happening to them."

Nevejan collaborated with the HKU professorship Performative Creative Processes to find a way to convey these experiences, which are often frightening and misunderstood. *If you are not there where are you* is both the title of the project and the main question posed by the researchers. Nirav Christophe and Henny Dörr paired nine artists from various disciplines with nine young people living with this form of epilepsy. In close collaboration, each duo made the invisible experiences visible, audible, and tangible in their own way. This resulted in far more than the nine artworks that traveled the country in the touring exhibition Mapping the Experience. "The strength of this project lies in its transmedial nature," says Christophe. A book documenting the entire research process and presenting all the results was also produced. Additionally, a VR installation was created to engage the imagination more directly by allowing participants to experience an absence firsthand. Finally, the project was culminated last year with an award-winning documentary by Nevejan, *Are You There*.

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Vignette: Serving society through scholarship: The human focus of the Faculty of Law, Economics and Governance

Elaine Mak

Serving society through scholarship: The human focus of the Faculty of Law, Economics and Governance

Our faculty thrives when we keep sight of the people we serve. That perspective shapes how we work, how we teach, how we do research, and how we organize collaborations such as through The New Utrecht School. The New Utrecht School and the Faculty of Law, Economics and Governance share five crucial similarities: a focus on (individual) needs of people in society, an interdisciplinary approach, an eye for interprofessional learning, an incorporation of culture and the arts, and the involvement of society to work on societal challenges together. In this we are inspired by our forebears, like Johanna Hudig of the historical Utrecht School, who taught us to start from unique phenomena understood from within their broader context – in our case oftentimes human individuals in their sociocultural world – in all that we do.

This means a commitment to open science in all its facets; not just open access and open data, but putting the citizen at the center by conducting science and scholarship in service of society. This in turn requires us to acknowledge our own institutional bubble. At the university, it may feel self-evident to work on sustainability, equity, and inclusion, but there are parts of society that feel quite differently about these topics, for instance because they experience the costs more acutely than the benefits. For example, households already struggling to make ends meet may be forced to invest heavily in moving away from gas. Open science for us therefore includes open listening and co-creation, so we work for society and with society.

We do this through inter- and transdisciplinarity, as many of the challenges we face cannot be solved by a single discipline. Our faculty is the only faculty in the Netherlands that brings law, economics and governance together in one organizational whole; interdisciplinarity is in our DNA. Successful interdisciplinary collaboration requires respect for the uniqueness of each discipline and each department, while at the same time guiding them toward what connects us: tackling societal questions that no single field can solve in isolation. This is visible in our programs, where students not only build a strong disciplinary foundation, but also learn to work across boundaries, guided by ethical reflection.

Working across borders also means collaborating with the arts. Our disciplines traditionally work extensively with written sources or large datasets. That material can feel abstract and highly theoretical, which is why we deliberately add other ways of knowing and showing. We visualize scholarship through drawing, we read literature to understand narrative structure, and we teach storytelling so that a legal argument does not only align logically but also speaks to a judge and onlookers. The minor in Language, Law and Culture, for example, developed with the faculty of Humanities, explores the function of narrative in legal reasoning and invites students to look at their craft from a new perspective.

The actualized Utrecht education model gives us a foundation, and we have started to develop it in practice. The model is more substantive than its predecessor and very closely aligns with what The New Utrecht School stands for: it focusses on interdisciplinarity, ethical skills, the connection with society and interprofessional learning. If we take this seriously, we must improve how we translate the university's strategic themes into our education and really put education at the same level as research. Educators need to be involved and valued more substantively. Much remains to be done, but our past and present show us that we are up to the challenge.

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Vignette: Automated unraveling of complex behavior in chronically ill children: New frontiers for computer science in healthcare

Ronald Poppe

Vignette: Automated unraveling of complex behavior in chronically ill children: New frontiers for computer science in healthcare

Technology and artificial intelligence are playing an increasingly prominent role in healthcare. This is reflected in our daily lives through the introduction of eHealth via various smart devices. The close relationship we have with technology also offers opportunities for new forms of research into health.

The New Utrecht School aims to contribute to this cross-boundary research, as well as to public dialogue and education concerning such healthcare and health innovations. A compelling example of new opportunities for collaboration between the healthcare domain and the Faculty of Science at Utrecht University is the computerized measurement of play behavior in children with a chronic medical condition. [1] These children often exhibit delays in motor development. Because they are often unable to attend school or play with friends due to their condition or hospital visits, their cognitive and social development is sometimes also hindered.

At the Wilhelmina Children's Hospital, the WKZ Sportief program[1] aims to offer these children greater opportunities for participation and to help build their resilience. In one of the sub-programs, children take part in eight sessions that include exercises inspired by cognitive behavioral therapy, with an emphasis primarily on play. Despite the physical nature of the program, its primary focus is on building self-confidence rather than motor development. The underlying idea is that a positive, self-aware child *feels* healthier – reflecting a shift in the concept of health initiated by Machteld Huber and her colleagues. [2]

The success of the program is evident from the positive feedback from both children and parents. Yet important questions remain: What exactly is being achieved , and which components of this clinical intervention are truly effective? We often look for objective, quantitative answers, typically obtained through validated questionnaires and expert observations, preferably within a controlled environment. But if it is precisely the spontaneous, playful interactions that spark behavioral change, how can these be measured?

1 https://www.hetwkz.nl/nl/wkz-sportief

In a pilot study – supported by the Child Health spearhead at UMC Utrecht – we administered a battery of validated questionnaires before and after the program. the children's movements during play were continuously monitored using overhead cameras and artificial intelligence algorithms that my colleagues and I had developed earlier. [3]

Using this technology, we can track in real time where each child is located, allowing us to observe individual behaviors such as levels of movement. Even more interesting, however, is the ability to analyze interactions and joint actions between children – for example, when one child chases another or when two children simultaneously run toward a ball. As play is highly dynamic (see figure), we use complex algorithms to extract meaningful patterns from movement data.

The main conclusion of the pilot study [1] was that, although we were able to measure that development was taking place, none of the methods alone could reveal *how* that development occurred. At The New Utrecht School, we allow ourselves to ask questions to which no single discipline has the answer. Yet through shared interests and a common focus, we can ask each other the right questions to gain a deeper understanding of such complex behavior. In doing so, we open up new areas in which interdisciplinary solutions can be developed by future generations of professionals.

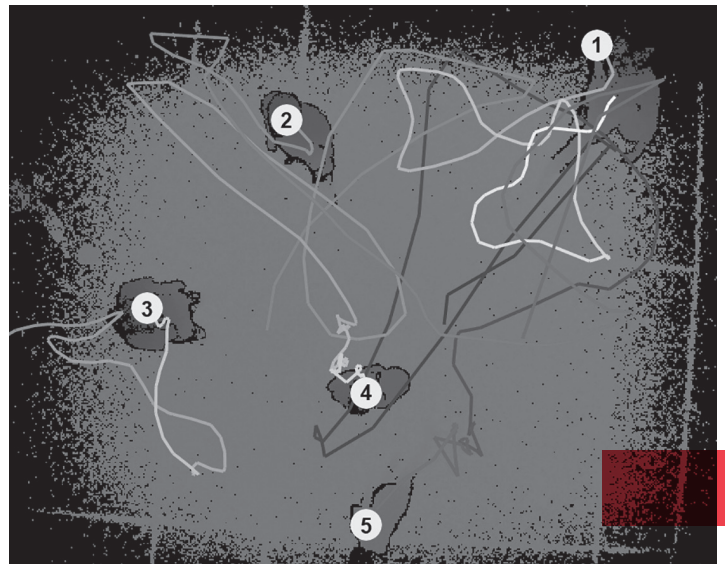

Figure 1: Movement of the playing children over the last 20 seconds (from [1]).

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Medical Humanities: Interdisciplinary collaboration for the professional of tomorrow

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Summary

The Medical Humanities – the intersection of the humanities, biomedical sciences, nursing, medical sciences and the arts – emerged from the need to address complex societal challenges in healthcare that cannot be resolved through traditional disciplines and methods alone. These challenges require an interdisciplinary perspective and approach, in which future healthcare providers and professionals learn to collaborate beyond the limits of their disciplines and beyond the constraints of professional status. This chapter outlines the importance of this interdisciplinary approach and illustrates it with examples from Utrecht University's minor and master programs.

Medical Humanities: Interdisciplinary collaboration for the professional of tomorrow

In our opinion, a valuable addition to the current education in healthcare and the broader health domain should stem from the question: How do we teach students to *look beyond* their own discipline? With this addition, we enrich thinking about health by involving professionals who integrate their own field with questions, methods, and knowledge from other relevant disciplines. As the scholars involved in the Utrecht School already stated in the 1940s, 1950s and 1960s: to understand the complexity of humans and society, an interdisciplinary approach is necessary.

Understanding people better, that is exactly what the field of Medical Humanities can help with. Medical Humanities refers to the cross-fertilization between the humanities, (bio)medical sciences, nursing, medical sciences, and the arts, but students from other disciplinary background are increasingly included. It emerged from the need to find solutions to complex societal challenges in healthcare and health, where traditional disciplines and methods fall short [1 pp. 3-4]. Just as for the members of the Utrecht School, for Medical Humanities (clinical) practice serves both as a starting point and as a learning environment (see Drost, this volume). We observe complex societal problems arising in practice, and bring together expertise to find solutions. In other words, these problems, in our view, require an interdisciplinary perspective and approach. Patients play a central role in this; they teach our students to explore alternative approaches and solutions. The Utrecht approach to Medical Humanities is characterized by an interdisciplinary and interfaculty program in which future healthcare providers and health professionals learn to work beyond the boundaries of their own fields in two ways: beyond the limits of their disciplines and beyond the constraints of professional status.

Within Medical Humanities, we encourage students from different disciplines to develop a better understanding of one another, complement each other's expertise, and collaborate on solutions that are more closely aligned with the experiences of patients and citizens in public health. At Utrecht University, this takes place in partnership with the University Medical Center (UMC) Utrecht, as part of the bachelor's minor program in Medical Humanities and a unique Master's program in Medical Humanities: *Geesteswetenschappelijke en geneeskundige perspectieven op zorg en gezondheid* (Humanities and medical perspectives on care and health). The aim of both programs is to encourage exchange and cross-fertilization between medicine, (bio)medical sciences, nursing, the arts, and the humanities. We argue that this exchange is essential for training a new generation of healthcare professionals, both now

and in the future. This chapter outlines the practical application of our interdisciplinary educational innovations in Medical Humanities at Utrecht University and the UMC Utrecht.

Complex challenges as a starting point

Both the Medical Humanities minor and Master's program in Utrecht take complex – that is, difficult-to-untangle – issues as their starting point. Humans are complex, and so are diseases and their treatments. Sometimes, medical treatment alone is not enough; sometimes the causes of a condition cannot be determined unequivocally; and sometimes medical solutions or public health interventions require expertise from the humanities (communication, ethics, learning to interpret narratives) and the arts (learning that different meanings, interpretations, and perspectives can coexist and must be connected creatively). The questions addressed in Medical Humanities do not adhere to the boundaries of arbitrary disciplines. Think of issues related to vaccination (COVID-19), end-of-life care, or trauma caused by a condition. Patients with chronic pain often feel lonely because they find it hard to explain their condition to others. By learning to appreciate the power of narratives, students in Medical Humanities are able to help patients make their experiences discussable. Another issue that falls within the field of Medical Humanities is the low adherence to treatment among (often low-literacy) patients. Multiple factors contribute to this, including the fact that such patients frequently receive brochures containing explanations and instructions that are difficult for them to understand. A concrete example of an effective approach is working together with patients and Medical Humanities professionals to devise solutions, testing them with a low-literacy group, and subsequently adapting hospital policies to ensure communication is accessible to all patients, including those with limited literacy. This example also illustrates that both the expertise of multiple professionals and the perspective of patients are necessary to enhance the effectiveness of treatments.

Within the new master's program, we have chosen to focus on six challenges that are relevant to *all* stakeholders in healthcare and the broader health domain. Those stakeholders include citizens, patients, healthcare providers, healthcare organizations, society, government, health insurers, and the professional field. These challenges will change over time.

In current approaches to such complex issues, there is a risk that decision-making is too heavily guided by expertise from a single perspective, causing other important considerations to be overlooked. What you do not know or are not aware of can, of course, not be taken into account. The policies implemented during the COVID-19 pandemic illustrate this point: Initial decision-making relied solely on the advice of virologists and other biomedical experts. In the shaping of post-COVID society, there was a call to incorporate broader expertise through the creation of an interdisciplinary research platform – drawing on insights from the humanities and social sciences, as well as from economics and law – so that different values could be weighed against each other and decision-making would

Six challenges in the Medical Humanities master's program:

1. Until recently, it was assumed that a "good" patient simply listens to the doctor, but today, patients and healthcare providers make shared decisions. What is the optimal relationship between the citizen/patient and the healthcare provider, and what role does the government play?
2. How can (bio)medical science best support clinical practice and the broader health challenges faced by society, and how can trust in scientific knowledge be restored where it has come under pressure?
3. How can health inequalities – often determined by socioeconomic factors – be addressed, and how can we create a morally fair healthcare system?
4. How can current and future medical-technological developments best be guided and implemented so that they serve the interests of the patient, the healthcare professional, and society as a whole?
5. How can we keep healthcare manageable, and where do we draw the boundaries of medicine and healthcare?
6. How can we, as a society, address differences in behavior and the global decline in mental health?

be more broadly informed (see, for example, https://www.uu.nl/opinie/bredere-expertise-nodig-op-weg-naar-open-post-coronasamenleving). Learning to put yourself in another's shoes is essential, and actually making use of the different opinions, values, and insights is equally crucial. As members of the Utrecht School have also argued, people cannot be reduced to a single act, statement, symptom, or diagnosis. Such isolated analyzes of complex processes will yield only limited knowledge (see Drost, this volume).

Interdisciplinarity as a solution

We see interdisciplinary thinking and practice as a way to gain better insight into the experiences of patients, the healthcare domain, and the care system. Interdisciplinary approaches also lead to meaningful solutions in practice. This is particularly true at a time when healthcare is undergoing numerous changes, such as shifting from intervention to prevention, [2] from specialists to network-based medicine, [3] from disease to health with a focus on resilience and individual autonomy, [4-6] from patient to person, [7] and from hospital to home. [3] It is also an era in which technology will increasingly take over "routine

tasks" in healthcare, allowing physicians to focus more on supporting patients through meaningful doctor–patient relationships. [8] These shifts place new demands on future healthcare professionals, both in terms of competencies and in the ways they collaborate.

Exchange

In the Netherlands, we train students to become biomedical scientists and physicians with cutting-edge knowledge of the human body, disease mechanisms, patient care, medication, and recovery. We also train scholars in the humanities to develop exceptional skills in analyzing texts and conversations, identity, philosophy of science and ethics, historical and cultural contexts, performances, and visual media. They learn to think critically and creatively, conceptualize clearly, and reflect with precision. These disciplines, however, rarely intersect. When they do, the interactions among faculty, researchers, students, and patients become especially meaningful. Such encounters often spark surprising insights, provoke unexpected conversations, and encourage both self-reflection and innovative solutions.

A concrete example is one of the Medical Humanities minor courses *Narratieven in de Geneeskunde* (Narratives in Medicine). This course focuses on learning to analyze, interpret, and contextualize the stories of others, such as those found in a novel, poem, or comic. It teaches students to critically assess the different ways stories are told: how, by whom, why, in what context, and from which perspective. Literary studies show that there are many stories in the world that can, may, and should be told. The physician and healthcare professional encounter the people behind these stories on a daily basis. Together, they learn that stories are collaboratively shaped, constructed, and understood. Both disciplines provide us with tools for eliciting stories and using them in healthcare – valuable for both, for example, the student of Dutch literature and the medical student.

Minor and Master Medical Humanities

At Utrecht University and the UMC Utrecht, the collaboration between the Faculty of Medical Sciences and the Faculty of Humanities has already been successfully implemented in multiple ways, notably through The New Utrecht School and the development of interdisciplinary educational programs. In 2020, the minor Medical Humanities was introduced, creating opportunities for interdisciplinary exchange across various fields through courses such as: *Geschiedenis en filosofie van de geneeskunde* (History and Philosophy of Medicine), *Ethiek: technologie en artificial intelligence in de zorg* (Ethics: Technology and Artificial Intelligence in Healthcare), *Ziekenhuiscommunicatie* (Hospital Communication), and *Narratieven in de geneeskunde* (Narratives in Medicine). The minor is accessible to students from the Faculties of Medical Sciences and Humanities, as well as to professionals. In our approach, we follow the principles of the Utrecht School: Knowledge is most effectively developed when we look beyond disciplinary boundaries and facilitate

Concrete case: course *Narratieven in de Geneeskunde* (Narratives in Medicine) within the minor Medical Humanities.

Course objective:

- In this course, students will learn about the role narratives can play in coping with illness.

Core skills:

- Students analyze patient narratives from various sources, such as autobiographies, novels, poems, and graphic novels, in order to develop a deeper understanding of the patient's lived experience.
- Together with a patient, students write a *co-constructed narrative* based on in-depth conversations conducted during a narrative clinic.
- Students are encouraged to express their personal (health) experiences through creative writing exercises.
- Students are paired with a professional writer who also has a chronic condition to create a set of lifestyle rules based on the writer's book and lived experiences. Students follow these rules for a two-week period and share their insights with their writer mentors. [9-11]

Outcome:

- Students learn to look beyond illness and symptoms, and to pay attention to the broader social context of patients' lives, including their feelings and experiences.
- By engaging with patients and reflecting on their own experiences, students discover the value of seeing through the patient's eyes, to truly listen, and, through narratives, to gain deeper insight into the person behind the patient.

interdisciplinary exchange, allowing us to comprehend the complex and unique interplay of body, mind, behavior, and consciousness across multiple levels, within the context of each individual's unique lifeworld.

This interdisciplinary exchange is further embodied in the first MSc-program in Medical Humanities in the Netherlands, launched at Utrecht University in the 2022–2023 academic year. This unique, one-year, Dutch-language master's program trains students and professionals for roles such as patient participation advisor, healthcare policy officer, hospital communications specialist, government health policy educator, healthcare consultant, or educational developer and researcher in the Medical Humanities. Within the master's program, medicine and healthcare intersect with philosophy, history, art andcreativity, literary studies, communication and ethics.

Students who complete the program distinguish themselves through their reflective and empathetic attitude, openness and flexibility, creative thinking, attention to individual cases rather than generic situations, and understanding that medical conditions occur in interplay with non-medical factors. By fostering a productive exchange among medicine, biomedical sciences, nursing, the arts, and the humanities, we prepare students in Utrecht to become mindful professionals equipped to meet the challenges of healthcare both today and in the future.

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Educating for the future: Care, Health and Society

Marco van Brussel,
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Summary

The complexity of contemporary challenges in (veterinary) healthcare clearly demonstrates that addressing them requires health professionals to engage in more interdisciplinary collaboration in order to generate innovative insights and solutions. The new Bachelor's program in Zorg, Gezondheid en Samenleving (Care, Health, and Society, ZGS) is one of the new programs at Utrecht University designed to train future healthcare professionals from a different perspective. In this way, students learn to bridge (interdisciplinary) boundaries and, from these boundary areas, become aware of the many factors that influence care, health, and society – reflecting the philosophy of The New Utrecht School.

Educating for the future: Care, Health and Society

We live in "liquid times," as sociologist Zygmunt Bauman aptly describes in his eponymous book. [1] Ideologies, institutions, human relationships, and consequently professions are changing at a rapid pace. Much in our professional and personal lives is uncertain, and this uncertainty appears to be growing. The only constant is change – not only in the material world, but also on a more existential level, affecting the way people live and work. [1] This is particularly true for future (health) professionals, as described by Susskind in his book *The Future of the Professions*. [2] Young people need to learn to prepare for a life and a society in which change – and the continuous adaptation to change – plays a central role. [2] How can we, as a university, equip future professionals in the health domain to navigate the constant change and increasing complexity of healthcare? Adopting a new educational and didactic perspective – one that places greater emphasis on understanding society (both now and in the future) and reflecting on one's own role within it – can be essential in preparing and empowering students for this challenge.

The complexity of today's challenges in (veterinary) healthcare – ranging from current and potential future pandemics to the effects of technology, pollution, and climate change on health, all within a context of increasing uncertainty in society and personal life – clearly demonstrates that health professionals must engage in more interdisciplinary (and even transdisciplinary) collaboration to generate innovative insights and solutions. This is simply because many of today's challenges are so complex that they cannot be addressed from the perspective of any single discipline. A compelling example is the recent COVID-19 pandemic, which illustrates that societal challenges in (veterinary) healthcare can no longer be addressed through a single discipline or within traditional paradigms. This development calls for Utrecht University (UU) to educate health professionals who are able to bridge interdisciplinary boundaries, learn from these intersections, and cultivate an awareness of the many factors that shape care, health, and society.

The new Bachelor's program Zorg, Gezondheid en Samenleving (Care, Health, and Society, ZGS) is one of the new programs (launched in 2022) at Utrecht University, designed to educate future healthcare professionals from a different perspective – one that encompasses content, didactics, and educational culture. Students who enroll in this new bachelor's program will gain an innovative and future-oriented foundation for one of the professional academic master's programs, such as Medical Sciences (SUMMA), Veterinary Medicine, Pharmacy, or other healthcare-related master's programs, such as the Medical Humanities. With the new bachelor's program, Utrecht University aims to take a greater and more innovative step in exploring how to guide young people in preparing for life and work as

Image: Students working in groups on interdisciplinary problems.

academic professionals within the broad domain of healthcare. Future ZGS students are expected to demonstrate a proactive and broad interest in, and curiosity about, (veterinary) healthcare and society. In addition, the didactic concept is strongly focused on (interprofessional and interdisciplinary) collaboration with fellow students and lecturers (community building). Inclusivity, service to society, and providing space and time for personal development (also beyond the curriculum) form the guiding principles. Emphasis on "classical" academic education and "deep learning," combined with new digital techniques, forms the core of the program's didactics. Deep learning consists of "critical thinking, integrating what the student learns with what he or she already knows, and making new connections between different concepts". [3] Students acquire comparative knowledge, understanding, and skills regarding the different fundamental systems of the body and health. In terms of content, the new program also distinguishes itself by explicitly focusing on broad academic and personal development, as well as on gaining insight into and understanding of social, societal, and technological developments and their impact on humans, animals, and society. Through the synergy between the various areas of human and veterinary medicine that come together within the ZGS Bachelor's program, graduates will possess a strong understanding and awareness of the complex context in which they will work. In this program, students are explicitly prepared for a future in which constant change and "lifelong learning" are the guiding principles. In addition, a programmatic approach to assessment, rather than a multitude of separate testing moments, will contribute to the long-term developmental evaluation of the student.

By adopting this alternative educational approach, the program aims to enable students to tackle contemporary complex challenges from diverse perspectives and to work collaboratively across multiple disciplines, thereby countering the siloed – or the often mono- or multidisciplinary nature – of existing programs, as highlighted in Chapter 2 (Marieke Drost). The philosophy of this program incorporates many elements of the

principles of The New Utrecht School, with interdisciplinary collaboration between pharmacy, veterinary medicine, and medicine already present in the first concrete design steps to develop the new curriculum.

> "I really hope that I can make a difference not only for individuals – patients – but also for society as a whole. I hope to join forces with others who share this vision, to create a healthcare system that is both better and more sustainable." "I strongly believe that healthcare professionals, both now and in the future, will need to combine different roles and responsibilities. That their work will not only involve clinical duties, but also research, education, social engagement, and perhaps even political involvement."
>
> *– Tambinh Bui (Bachelor of Pharmacy, currently enrolled in the SUMMA program and involved in the development of ZGS)*

In shaping and implementing this new program, the expertise of the three Life Sciences faculties (Medical Sciences, Veterinary Medicine, and the Sciences) is not the only resource utilized. The expertise of the faculties of Humanities, Geosciences, Social Sciences, and Law, Economics and Governance (REBO), as well as that of Utrecht University's collaborative partners, is also utilized. Modules such as *Zorgsystemen in een veranderende samenleving* (Healthcare Systems in a Changing Society), *Denken & denkers* (Thinking & Thinkers) and *Gezondheid & technologie* (Health & Technology) are excellent examples of this (see also Figure 1: Course Overview).

As mentioned earlier, the ZGS program has an innovative character. The design of the program is based on several innovative principles that have already proven effective in educational research, such as (interactive) active learning, interdisciplinary learning, collaborative learning, learning through authentic cases, and learning from feedback. [4–5] Students work on topics and societal challenges and are encouraged to explore them broadly; they are given more freedom to determine the breadth and depth of the program's content (e.g., during the step-back weeks), but this also comes with increased responsibility. The program's emphasis on student autonomy and the freedom to engage with content in greater breadth and depth embodies the philosophy of both the old and The New Utrecht School. Step-back weeks take place in the final week of each module and include themes that provide a broader perspective on socially relevant topics, aiming to encourage students to reflect on their own development. While the themes are diverse, they share a common purpose: to engage students in novel experiences that foster

both personal and professional development. Students themselves play a major role in determining the exact content of the step-back weeks. They are encouraged to articulate their needs and share responsibility for shaping the program. Students collaborate actively in teams and conclude the week with a creative presentation of their learning outcomes and experiences. During these weeks, the initiative rests primarily with the students, with the program serving as a facilitator to support their learning process. Examples of themes include healthy studying, all about communication, technology week, and the meaning of art and music (see also the course overview).

Course overview of the new bachelor's program ZGS

Year 1

Period 1		Period 2		Period 3		Period 4	
Vroege ontwikkeling (Early Development)	Step-back week *Persoonlijke ontwikkeling & gezond studeren* (Personal Development & Healthy Studying)	*Zorgsystemen in een veranderende samenleving* (Healthcare Systems in a Changing Society)	Step-back week *Communicatie, achtergrond & inzicht* (Communication, Foundations and Insights)	*Vergelijkende bouw & functie* (Comparative Structure and Function)	Step-back week *Systeemdenken* (System Thinking)	*Mechanismen van ziek & gezond* (Mechanisms of Health and Disease)	Step-back week Science Slam
		Systemen op moleculair niveau (Systems at the Molecular Level)		*Denken & Denkers* (Thinking & Thinkers)		*Verkenning samenleving* (Exploration of Society)	

Year 2

Period 1		Period 2		Period 3		Period 4	
Wetenschap voor academische professionals (Science for Academic Professionals)	Step-back week *(creatief) Schrijven* ((Creative) Writing)	*Mechanismen van ziek & gezond* (Mechanisms of Health and Disease)	Step-back week *Wetenschapsfilosofie* (Philosophy of Science)	*Principes van interventie & therapie* (Principles of Intervention & Therapy)	Step-back week *Retorica en argumenteren* (Rhetoric and Argumentation)	*Mechanismen van ziek & gezond* (Mechanisms of Health and Disease)	Step-back week *Technologie* (Technology)
Microben & infectie (Microbes & Infection)		*Kwantitatief denken voor health professionals* (Quantitative Thinking for Health Professionals)		*Gezondheidszorg & samenleving* (Healthcare & Society)		*Verkenning samenleving* (Exploration of Society)	

Year 3

Period 1		Period 2		Period 3		Period 4	
Introduction to Practice	Step-back week *Filosofie en technische vooruitgang* (Philosophy and Technological Advancement)	*Gezonde omgeving* (Healthy Environment)	Step-back week *Interprofessioneel werken* (Interprofessional Working)	Elective/Focus on Societal Themes	Step-back week *Betekenis van kunst en muziek* (Significance of Arts and Music)	Choice/ Specialization Choices for Further Studies DGNK, GNK or Pharmacy	Step-back week Project Completion
Technologie & de toekomst vd gezondheidszorg (Technology & the Future of Healthcare)		*Ontsporing & veroudering* (Dysregulation and Aging)		Choice/ Specialization Choices for Further Studies Vetarinary Medicine, Medicine or Pharmacy		Final Project	

In addition to acquiring comparative knowledge, understanding, and skills related to the various basic systems of the body and health, explicit attention is given to broad academic and personal development. Explicit attention is also given to developing insight into and understanding of social, societal, and technological developments and their implications for humans, animals, and society. Courses from the first year in which this broadening is clearly visible include *Denken en denkers* (Thinking and Thinkers), which focuses on philosophy and ethics, and the course *Verkenning samenleving* (Exploring Society) (see course overview). In the latter course, students explore various professions around a common theme and become acquainted with the different perspectives and focal points of health professionals across diverse fields, such as the Netherlands Food and Consumer Product Safety Authority (NVWA), Jeugdzorg (Youth Care), pharmacists, (veterinary) doctors, the Health and Youth Care Inspectorate (IGJ), and the business sector. The program concludes with an interdisciplinary "societal challenge," in which students are encouraged to tackle a societal problem in healthcare head-on. This challenge requires interdisciplinary collaboration and a solution-oriented, creative approach. During the challenge, the various pillars of the program are addressed. The assignments for this challenge come from, or are relevant to, clients from society, with whom the students will also work closely.

Due to its broad, interdisciplinary nature and its innovative didactics and educational culture, this program contributes to the diversity of the student body entering the master's programs (Veterinary Medicine, Medicine, and Pharmacy), and thereby to greater diversity among graduates. For students, the program is attractive because it offers the opportunity to prepare for one of the master's programs – such as Medical Sciences (SUMMA), Veterinary Medicine, or Pharmacy – or for another master's program within the broad field of (animal) healthcare, in a way that differs from the existing bachelor's programs. This allows students more time before they have to make a definitive choice within healthcare. It is expected that these students will also contribute to enrichment within the master's programs and introduce other students to a broader perspective on health. In the future, these students will be able to act as bridge-builders between the various medical and non-medical disciplines. Even if they specialize within the medical field, their broad foundation will ensure that they remain aware that they are part of a larger whole that influences both health and society. This principle, which was central to the historical Utrecht School, will once again be embodied in The New Utrecht School and in this new program.

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Vignette: New directions in healthcare professionals training through the strategic alliance

Harold van Rijen,
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Vignette: New directions in healthcare professionals training through the strategic alliance

What will the biomedical researcher or doctor of the future look like? That is a question that concerns us, or rather, that should concern us as a university: "Are we still educating people who meet the demands of the job market and/or society?"

A few years ago, we organized a meeting with the advisory board of the Graduate School of Life Sciences at Utrecht University, centered around the following question: "What does the ideal newly graduated master's student look like?" The outcome was surprising, though maybe not entirely. Almost all of the traits mentioned involved personal skills: "Able to work well in a multidisciplinary environment; proactive; creative problem-solver; strong writer and presenter; resilient under pressure; able to work effectively in a multidisciplinary environment; proactive; creative problem-solver; strong writer and presenter; resilient." Or participants said: "We are looking for a junior doctor/biomedical master who:", followed by a list of personal skills similar to those above. Similarly, when applying for a medical position, it is rare for specific professional knowledge or skills to be the primary focus. Candidates who are open-minded and can collaborate effectively are highly valued in any work environment. [1]

We argue that both educational programs and students tend to focus heavily on developing disciplinary skills (knowledge and its application), and that there should be greater emphasis on interdisciplinary education, broader personal competencies, and sound judgment. At The New Utrecht School, we have embarked on this approach, and in this contribution, we focus on our collaboration with our strategic alliance partners at Eindhoven University of Technology and Wageningen University & Research.

Biomedical programs and selection

The number of students in the Netherlands has grown significantly in recent years. To safeguard program quality, as well as financial and organizational sustainability, several measures have been introduced – such as maximum study duration agreements, binding study advice for first-year students, and entrance selection procedures in various biomedical programs at both the bachelor's and master's levels. Although selection is seen as a useful tool, it also has disadvantages. Knowledge-based tests are often used in the selection of bachelor's programs, which may be justified, as high scores on these tests correlate most strongly with successful completion of the degree. Consequently, students who excel at reproducing knowledge are the ones most likely to make it through this initial stage of selection. After some time in the bachelor's program, students typically aspire to enroll in a specific, often competitive, master's program, for which the selection process considers their academic performance, motivation, and choice of subjects. As a result, students strive for high grades and carefully choose their courses to maximize their chances in the selection process. In the process, students tend to follow a narrow disciplinary path, eventually becoming competitors in the next stage of selection. Such strategic choices are frequently repeated during the master's phase as students prepare for positions such as PhD candidates or specialist trainees. In this way, an original ambition based on intrinsic motivation is displaced by competition, which can hinder collaboration – an essential component of effective teamwork.

Interdisciplinary encounters

In today's educational landscape, students are often guided along a narrow path, resulting in "single-topic experts," with extensive in-depth knowledge. While such expertise is undoubtedly essential for addressing complex scientific problems, even single-topic experts must be able to collaborate and communicate effectively with experts from other domains.

Increasingly large and complex problems are arising (the so-called wicked problems) both within and beyond the biomedical domain, for which there is no single solution and which require the involvement of multiple disciplines. This requires, above all, collaboration and an understanding of how other disciplines approach problems. An engineer, for example, approaches a problem in a very different way than a biomedical researcher. While the former is primarily focused on defining the solution, the latter tends to explore the root of the problem. Both strategies have value, but combining them increases their overall impact. [3]

Focusing on the individual within their context

Effective collaboration and communication across disciplines require speaking a common language and agreeing on shared definitions of the problem. These so-called boundary crossing skills are increasingly emphasized in various programs. By exposing students to other perspectives at different stages of the program, they will be better equipped to express how their disciplinary expertise contributes to a potential solution. They will also come to realize that learning is not merely about reproducing knowledge, but about developing skills that can be applied in constantly changing contexts. This is also known as developing adaptive expertise and involves dealing with complex problems, integrating and transforming knowledge, learning from mistakes, and fostering the creative thinking process. [5]

Within today's cognitively oriented and domain-specific educational landscape, relatively little emphasis is placed on the development of adaptive expertise. Moreover, the

current focus on knowledge acquisition within our current education implies a sense of controllability, while in reality, uncertainty dominates. Adaptive expertise also helps in learning to navigate this uncertainty. [6-8]

From theory to practice and back

Accordingly, interdisciplinary education is taking on an increasingly significant role at Utrecht University in general, and at UMC Utrecht in particular. In September 2022, the interdisciplinary Bachelor's program Zorg, Gezondheid en Samenleving (Care, Health, and Society, ZGS) was launched, representing a collaboration between the Medicine, Veterinary Medicine, and Pharmacy programs (for further details, see the chapter by Van Brussel et al. in this volume). That same month, the Master's program in Medical Humanities was introduced, developed jointly by the Faculties of Medical Sciences and Humanities (see the chapter by Van Charldorp et al. in this volume for more information).

Through the strategic alliance of Utrecht University, the University Medical Center Utrecht, Eindhoven University of Technology, and Wageningen University & Research, we are able to collaboratively develop interdisciplinary educational programs for students across these institutions. At present, this collaboration is primarily realized through challenge-based learning (CBL), an approach that focuses on a real problem faced by patients or by society as a whole. Since CBL problems frequently have no predetermined solution, students are not assessed on providing a single correct answer. These teaching approaches, now integral to the Selective Utrecht Medical Master (SUMMA) and the Graduate School of Life Sciences research Master's programs, focus not only on combining research- and solution-oriented insights, but also on cultivating skills such as interdisciplinary teamwork, personal leadership, communication with stakeholders, coping with uncertainty, and creative problem-solving. These are the very skills that, in addition to professional knowledge, future health professionals will need to practice their profession successfully – skills that The New Utrecht School actively promotes.

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Vignette: The New Utrecht School: A cross-disciplinary framework for the Faculty of Humanities

Thomas Vaessens

Vignette - The New Utrecht School: A cross-disciplinary framework for the Faculty of Humanities

The Faculty of Humanities likes to explore the boundaries of disciplines both within and beyond its walls, and this drive for interdisciplinary and thematic collaboration is strengthened by our conviction that the broad range of expertise within the humanities offers great added value for research into the major issues of our time. Many of today's most intense societal debates are, at their core, deeply cultural. They quickly lead to questions of identity, diversity, history, heritage, ethics, religion, communication, and language. At the same time, we are increasingly aware that the profound technological and demographic changes shaping our world also carry significant human, moral, and cultural dimensions. The humanities provide critical knowledge and skills for addressing wicked problems such as digitalization and artificial intelligence, mobility and migration, sustainability, and the aging population.

Several of our programs are built entirely around the idea of interdisciplinarity, such as Liberal Arts and Sciences (LAS), Artificial Intelligence (AI), Gender Studies, Linguistics, Communication Studies, Media Studies, Literary Studies, and Intercultural Communication. We also work in interdisciplinary research groups on issues that affect society and healthcare, such as: climate change and sustainability, institutions in open societies, ethics, gender and diversity, artificial intelligence, and creativity in education and research.

It is our firm belief that our contribution to the Medical Humanities can be highly impactful. We know how to bring together colleagues and students from different disciplines, help them learn to speak each other's language, and learn from one another. This is precisely what this new Master of Science is all about: working together to help address complex problems in the field of health. We are pleased that our faculty can make this contribution. We have the scientific methods to further develop both "understanding" (Verstehen) and "comprehension": through dialogue and critical analysis, qualitative methods, as well as quantitative, evidence-based methods from linguistics and communication studies.

We believe that true understanding and interdisciplinarity require an open mindset. Complex problems often have multiple, interrelated causes. To develop sustainable solutions in healthcare, it is essential to investigate these causes in a connected and holistic way. Professionals must therefore be willing to remain open to the knowledge, insights, and methods from other disciplines. Drawing on the arts, communication studies, gender studies, religious studies, and philosophy, the humanities have the tools to cultivate this openness in the new Medical Humanities students. We hope this will lead to more fruitful interactions between healthcare professionals and patients, as well as among healthcare professionals themselves. At the same time, we recognize that fostering openness is something we must also uphold within our own academic community. We learn from physicians, like Daphne Voormolen at the UMC Utrecht, who have been incorporating art into their clinical practice for many years. By doing so, they offer patients a way to process significant loss – showing us the profound role art can play in both everyday life and healthcare settings.

In this way, Medical Humanities not only helps shape a new kind of healthcare professional, but also enriches and transforms the very disciplines that contribute to it. Cross-fertilization between disciplines brings about meaningful shifts, and I look forward to seeing how this will unfold in the coming years across medicine, nursing, biomedical sciences, and the humanities.

The New Utrecht School offers an inspiring context for the Faculty of Humanities to contribute actively to this development – particularly because it pushes interdisciplinarity beyond the conventional boundaries of the university by creating an interesting and important crossover between science and artistic practice. The early pioneers of the Utrecht School were ahead of their time in the post-war era, forging connections between diverse scientific fields such as pedagogy, psychology, criminology, biology, and medicine. However, they did not cross the boundary between science and art. This was undoubtedly influenced by the literary climate of the time: The pessimistic, anti-moral outlook of Dutch writers like Reve and Hermans, who were prominent at the time, sharply contrasted with the optimistic spirit of the Utrecht School. Perhaps more importantly, the time was not yet ripe for the insight we have today – reinforced, in part, by the COVID-19 pandemic – that addressing the complexity of major societal issues in health and care demands the integration of all areas and forms of knowledge: not only the natural sciences, but also the social sciences and humanities, which are no less important, including the realms of imagination and storytelling. In their contribution on Medical Humanities elsewhere in this volume, Tessa van Charldorp, Megan Milota, Veerle Siebinga, Kiene Brillenburg Wurth, Ted Sanders, and Stefan van Geelen provide excellent examples of this. The New Utrecht School boldly bridges the realms of science and (artistic) practice. Both the HKU University of the Arts Utrecht and the Faculty of Humanities at Utrecht University are enthusiastic and dedicated partners in this endeavor.

APPENDIX

Foreword to the previous Dutch edition

Henk Kummeling

Reflections on old schools and things that resurface

On the shining example that is the Utrecht School

Anyone who believes fashion exists only in the world of fashion has yet to understand the world of science. Science, too, has its fashions – though we call them by different names, such as the *Matthew Effect*. Anyone who delves deeply into the history of science, as Floris Cohen does in his masterful book *How Modern Science Came into the World,* [1] will see that behind every revolutionary transformation in science, there is actually a long-sustained fashion. Even today, scientific fashions shape our trajectory, sometimes leading us toward highly risky, futile paths. One of the wrong turns taken by universities in recent decades has been the separation of education and research.[1] [2 pp. 263-264] Moreover, more importance came to be attributed to carrying out research. Research output became the key factor in determining whether an academic career could be pursued. This resulted in the development of various bibliometric systems to represent (perceived) quality through numerical measures. Consequently, in many scientific fields, we have been more engaged in *Science for Scientists* than *Science for Society.* [3] The same wrong turn has contributed to the false notion of an existing hierarchy among scientific disciplines, in which fields that use scientific methods are regarded as superior, and only the insights from the natural sciences are seen as having truly changed the world. [4] This overlooks the fact that scientific fields are, at their core, very similar. All scientific practices involve at least three core tasks: classifying (observations), explaining and predicting. [5 p. 772] This is just as true for the humanities and social sciences as it is for the natural and medical sciences, for example. Sometimes, the supposed hierarchy between scientific disciplines is sought in a distinction between those that are considered to be "empirical" and those that are not. This overlooks the fact that many humanities and social science disciplines are also based on observations. Observations that are subsequently linked together. In that sense, they are also empirical sciences. [4, p. 16] These observations are also used to identify regularities and patterns, and perhaps even underlying laws. But these are not the "laws" with absolute and universal validity as we know them from

1 I have discussed this issue in more detail elsewhere. See Kummeling HRBM. De rijzende rechtswetenschap [The rising science of law]. In: Vries B de, Mak E, Berge L van den, Riesthuis T, Tigchelaar J, Kiewiet J, et al., editors. Rechtstheorie en praktijk – een liber amicorum: Beschouwingen rondom het werk van professor A.M. Hol [Legal theory and practice – a liber amicorum: Reflections on the work of Professor A.M. Hol]. Den Haag: Boom Juridisch; 2020: p. 263 and following. Some of the ideas from that publication have also been used in this foreword.

theoretical physics.[2] [1,6] Such "laws" are rare outside theoretical physics and are uncommon even in other natural sciences, as Rens Bod has aptly demonstrated. [4 pp. 433–434] Generally speaking, scientists are already pleased if they are able to discover patterns and regularities in empirical data and observations.

Fortunately, at least in Utrecht, we found that the described turn has proven to be a dead end. Along our journey through time, we reach a turning point that we could have taken, one that would have led us more quickly to the path we now recognize as the way forward: the road to open science.

At that three-way junction in time, we encounter the so-called "Utrecht School". After the Second World War, a significant number of prominent scientists formed a loosely organized network to seek multidisciplinary collaborations, particularly in the fields of the social and behavioral sciences, law, and medicine. It appears that, at the time, they were not fully aware that what they were doing was truly remarkable. From a distance, however, it was striking. It was the Strasbourg professor Jean Léauté who coined the term "the Utrecht School" after being struck by what occurred in Utrecht [7] – although those involved there did not perceive it so clearly themselves. In later years, it has even been suggested that there were two Utrecht Schools, [8] and that a new Utrecht School has already existed as well. [9 p. 55] Be that as it may, looking back from the present day, it is striking that the group of scientists, who collaborated with each other in various multidisciplinary contexts, adopted a different perspective on human beings. Rather than focusing on natural scientific approaches with causal laws about the human object, there was also room for more phenomenological, philosophical approaches. [10 pp. 142, 166] Their approach to science was driven by a desire to find innovative solutions to major societal problems. This was complemented by their active involvement in society, which included giving lectures, appearing on the radio and writing newspaper articles. [10 p. 145] Naturally, their scientific work was also internationally oriented, [10 p. 151] as evidenced by the fact that it was a Frenchman who identified them as a "school." They even caught the attention of another great French thinker of the time, Jean-Paul Sartre, who immersed himself in Utrecht despite his bleak existentialism having little in common with the Utrecht scholars' more harmonious view of society. [11 p. 97]

2 On that note, it is interesting how the paradigms of atomism and deterministic time and space, mainly introduced from physics, have influenced the perception of science and how it should be. See Floris Cohen H. How Modern Science Came Into The World. Amsterdam: Amsterdam University Press; 2010, but also the doubts and discomfort about this issue as expressed by younger scientists, such as Durston S. and Baggerman T. in The Universe, Life and Everything. Dialogues on our Changing Understanding of Reality. Amsterdam: Amsterdam University Press; 2017.

The Utrecht School, whether singular or plural, fell out of fashion in the early 1960s.[3] I will not attempt to explain why – those explanations can likely be found in the other contributions in this publication. What matters to me more is noting that many of the principles of the Utrecht School from that period now underpin a major cultural shift in today's academic world: open science. For scientific practice to be of high quality and legitimate, it must focus much more on the issues that society is grappling with on a local, regional and global scale. This involves making scientific work more accessible to society and sharing its results beyond articles in scientific journals that are only understandable to professionals. In that light, it is extremely encouraging that, in 2017, the University Medical Center Utrecht, the HKU University of Arts Utrecht, and Utrecht University came together to establish The New Utrecht School (De Nieuwe Utrechtse School), building on the foundations of the "old school" to become a figurehead for future scientific practice.

History seems to be repeating itself, but as we know, it never repeats in exactly the same way – not even in fashion. It is my expectation and certainly my hope that, with open science and The New Utrecht School serving as its epitome, we have embarked on a path that will advance both science and society.

3 Kelk 2002, p. 53; Abma c.s. regard the Utrecht School primarily as a 1950s phenomenon. See Abma 2009, p. 141.

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Vignette: The importance of a holistic approach to the connection between human and planet

Wilco Hazeleger

The importance of a holistic approach to the connection between human and planet

It is evident that major societal issues bring disciplines together. While much knowledge already exists within individual disciplines, it still needs to be integrated. Issues such as sustainability have long and complex time horizons, often spanning multiple generations. Addressing them involves not only the (geo-)sciences, but all fields of science and scholarship. It is essential to understand the functioning of the Earth and its ecosystems, as well as the possibilities for developing a hydrogen economy and the institutional frameworks that shape the energy transition. As The New Utrecht School has already highlighted, there is an important interconnection between health, healthcare, and sustainability.

What makes The New Utrecht School so unique is the way it sparks academic debate. The long and rich tradition of academic debate that characterizes the United Kingdom and the United States is far less present in the Netherlands. The New Utrecht School seeks to promote public debate in the Netherlands through its public dialogues, bringing together scientists, artists, patients, and other stakeholders to exchange ideas in a spirit of openness and constructive discussion. A good example is the public dialogue on Climate Change and Health held on 7 October 2021. During the event, architect Thomas Bögl, spatial artist Maria Koijck[1], general practitioner in training Evelyn Brakema and I discussed the impact of climate change on health and how medical science can become more sustainable. Art and science offer distinct perspectives on the issue, with art representing an alternative form of knowledge that operates with fewer constraints and formal rules.

Art can challenge science. What can we truly do with our knowledge? How is it applied in practice? What do we actually do with what we know? Such intellectual stimulation should be actively encouraged. At the Faculty of Geosciences, we are currently exploring a collaboration with an art academy. Ideally, such a collaboration would be made structural by having an artist-in-residence at the faculty and a professor-in-residence at the academy. Such a collaboration with an art academy does not, of course, need to be exclusive. A similar collaboration between the Faculty of Geosciences and the HKU University of the Arts Utrecht (HKU) would benefit both parties. For example, they could explore how the geosciences, arts and medical sciences could complement each other. This should not happen merely in parallel trajectories, but as part of a holistic whole.

1 https://www.mariakoijck.com/

Looking ahead, it is essential to integrate parallel trajectories. In fields such as sustainable food and circular society, we are doing particularly well. These interdisciplinary projects involve ongoing collaboration with other institutions, including Wageningen University & Research, the Eindhoven University of Technology, and the UMC Utrecht. The real challenge lies in integrating these projects effectively. The New Utrecht School has substantial experience of taking a holistic approach, making it a highly valuable partner. The COVID-19 pandemic and the ongoing sustainability crises have underscored the extent of our societal unpreparedness. Fostering interdisciplinary collaboration will help ensure that future crises do not catch us off guard.

Vignette: Understanding health within The New Utrecht School: The Importance of interdisciplinary collaboration in the social sciences

Marcel van Aken

Understanding health within The New Utrecht School: The importance of interdisciplinary collaboration in the social sciences.

On November 10, 2021, a public dialogue was held by The New Utrecht School as part of the series "Creating a Healthy Tomorrow Together." The panel featured a diverse range of speakers – besides professor of Life Course Medicine Elise van de Putte, artist Saskia Noordhuis[1] and board member of the Dutch National Youth Council Jolijn Amorison, I had the opportunity to participate in a conversation about how language and narratives support the healthy development of children and young people. The contributions from various scientific disciplines, along with the involvement of people from the arts and relevant societal groups, offered a refreshing counterbalance to the narrow, siloed perspectives that have long dominated certain areas of academia.

This compartmentalized mindset has, in part, been a consequence of the hyperspecialization that has characterized recent decades. The social sciences can be generally categorized into three areas: societal, behavioral, and educational. As a result of this hyperspecialization, researchers have tended to publish primarily in journals specific to their own disciplines. The social sciences, however, have long recognized the importance of adopting a broader, more interdisciplinary perspective – an approach that continues to gain traction. At the same time, as in nearly all scientific fields, there is still significant progress to be made in this regard.

Moreover, a substantial part of our education system remains focused on preparing students for specific professional roles. These professions understandably impose requirements on what students must learn in order to work within a specific domain. Essentially, university education as it stands is too limited in time. Within four years (three years for the bachelor's and one year for the master's), students are expected to learn and practice methods, theory, specialized knowledge, and much more. A short timeframe, in which a lot needs to be accomplished.

The system would greatly benefit from more time and space, and thus longer programs, but achieving this would require broad structural changes. Within the current system, students are primarily focused on graduating on time and securing a job as quickly as possible – which is entirely understandable. However, this leaves little room for reflection, for exploring beyond disciplinary boundaries, or for engaging with the arts to discover what we might learn from one another. Greater interdisciplinary collaboration would also be very beneficial in this context. Despite the tension this creates with the demands of condensed study programs, we are fortunately also seeing a growing demand for interdisciplinarity here, also from the professional fields themselves.

There is a pressing need for reflection and focus on interdisciplinary challenges. In the last decade, it has become evident that hyperspecialization by itself cannot address the significant societal challenges we face today. Tackling complex societal challenges requires more than the viewpoint of just one discipline. Within the social sciences, we are increasingly exploring how we can contribute to interdisciplinary solutions for societal problems.

This also requires an even stronger orientation toward society. The social sciences have a long tradition of stakeholder engagement, yet it has frequently been confined to providing information. Significant steps are now being taken to identify the real issues in society and how science can address them – while still allowing space for independent (fundamental) research, where societal impact may not be immediately apparent.

Going forward, issues like sustainability and prevention, fostering open societies, and promoting healthy development in children and young people will continue to demand interdisciplinary cooperation. At the Faculty of Social Sciences, with regard to the latter, we focus primarily on the university's strategic themes *Institutions for Open Societies* and *Dynamics of Youth*. It may take a while to understand each other's language, yet the experience of learning from one another at The New Utrecht School will serve us well for the rest of our careers.

1 https://noordje.nl/over-noordje/

Afterword to the previous Dutch edition

Margriet Schneider
and Arno Hoes

The New Utrecht School: A vision for the future

In 2022, we celebrated that Utrecht exists for 900 years as an open city without walls. To mark this milestone, this volume not only extensively reflects on the historical Utrecht inspirations of The New Utrecht School but also offers many innovative perspectives on the future. In their contribution, Marieke Schuurmans, Tatjana Seute, and Roger Damoiseaux look ahead with anticipation to Utrecht's 400th anniversary of science in 2036, envisioning how the training of healthcare professionals may have evolved by that time. Extending this perspective beyond healthcare to the broader education of future professionals, the metaphor of Utrecht as a "city without walls" – open to new ideas, organizations, partnerships, and entrepreneurs – emerges as a powerful and fitting image.

If the current complex era – and especially the COVID-19 pandemic – has made anything clear to society and to science, it is that health requires an open and interdisciplinary approach, far beyond the perspective of healthcare alone. In healthcare, of course, (basic) biomedical and epidemiological research into the prevention, causes, control, and treatment of disease remains of utmost importance. Just as high-quality, evidence-based nursing, medical, and paramedical care for patients with acute or chronic conditions remains essential. At the same time, it is becoming increasingly clear that the broader health domain must be approached in a radically new way. To shape such a new approach to health, the Utrecht region is uniquely positioned – with collaborations in, among others, the Utrecht Science Park, the Health Hub Utrecht, the Economic Board Utrecht, and the strategic alliance with Eindhoven University of technology and Wageningen University & Research. Together, they work with engineering firms, construction companies, and developers to advance health and sustainability.

After all, our individual health is deeply connected to the health and behavior of those around us. The well-being of animals cannot – and should not – be viewed as separate from our own. Our (future) lives fundamentally depend on a sustainable approach to global well-being. In essence, it is about planetary health, welfare and well-being rather than "individual health". An important task of science is not only to generate these insights, but also to move beyond discussing them solely among professors at conferences. Much broader communication, particularly around prevention, is also crucial to support a wide audience, including policymakers, in their decision-making. Trust in science is essential in this regard, yet we all know that this trust has been greater in the past. To achieve this, scientists must clearly explain how they arrive at their findings and share this knowledge openly and effectively. Today's science, characterized by deep specialization and organization

into expert silos, is not always well-equipped for this task. The legal basis, as well as the organizational and economic consequences of (large-scale) health interventions, must also be systematically considered – along with how these interventions should be communicated – before any decision to implement them is made. Moreover, finding creative solutions to the complex challenges in healthcare requires structural collaboration between (applied) universities, colleges, and community partners.

This new reality calls for the education of professionals who can adapt flexibly to changes and complex challenges in the workplace, and who commit to lifelong learning. The New Utrecht School aims – as Marieke van der Schaaf supports in her educational science contribution – to train adaptive professionals and to create open learning and working environments focused on gaining experience and critical reflection across disciplines, contexts, and perspectives. To achieve this goal, The New Utrecht School – as described by Stefan van Geelen and Megan Milota in the Dutch version of this volume – explicitly focuses not only on interdisciplinary collaboration but also on inclusion and diversity, art and creativity, developing adaptive expertise across the continuum of education, research, and care, and involving the broader public (including, of course, patients) in the dialogue about societal issues.

What the many authors of the various contributions in this collection convincingly demonstrate is that in Utrecht, we are already actively engaged in this innovative way of thinking about complex societal challenges. This volume demonstrates that we cannot only build upon the scientific tradition of the historical Utrecht School from the immediate post-World War II era; it also shows that with The New Utrecht School,[1] we possess a strategic platform to transform Utrecht into an internationally recognized symbol of inter- and transdisciplinary collaboration.

In the preface of this volume, Henk Kummeling presents an intriguing proposition. He writes that, in the years following World War II, the academic community in Utrecht was not fully aware that the work of the Utrecht School was truly remarkable, a recognition that primarily came from abroad. We share his view that The New Utrecht School can serve as a flagship in the field of health, embodying a model for future scientific practice grounded in Utrecht's interpretation of open science principles. Should we not offer our international partners the opportunity to also experience this "Utrecht experience" by establishing an institute similar to those already represented in, for example, the *Network of European Institutes for Advanced Study*?[2] We have taken a first step toward this in our multi-year strategy.[3] But hope that this publication – with significant contributions from Utrecht University, the HKU University of the Arts Utrecht, and the University Medical Center Utrecht – will serve as a starting point to jointly take new steps toward realizing an internationally oriented and inclusive *New Utrecht School for Advanced Study*.

1 https://www.uu.nl/onderzoek/de-nieuwe-utrechtse-school

2 http://netias.science

3 See The New Utrecht School for Advanced Study in Connecting Worlds: https://www.umcutrecht.nl/nl/strategie

The Authors

Isabel Arends is dean of the Faculty of Science, professor of Sustainable Organic Chemistry, and chair of the open science team of the Faculty of Natural Sciences. At TU Delft, her research focused on developing new enzymes that serve as catalysts, enabling chemical processes to become much more sustainable. Isabel was also head of the Biotech Delft Academy for postgraduate education and developed a MOOC in the field of biotechnology.

Bert Arets is an experienced educator in various roles and serves as program coordinator of the Selective Utrecht Medical Master (SUMMA) in Utrecht. He is an associate professor of Medical Education. In addition, Bert has worked for more than 25 years as a pediatric pulmonologist at UMC Utrecht, focusing primarily on children with cystic fibrosis, severe asthma, or congenital lung disorders.

Marcel van Aken was dean of the Faculty of Social Sciences and professor of Developmental Psychology. His research focuses on personality development in children, adolescents, and young adults. Marcel's work examines how interactions between personality traits and social relationships with parents and peers contribute to competence, maladaptive outcomes, or personality disorders.

Silvester Beelen is studentassessor for the academic year 2025-2026 of the Faculty of Medical Sciences. He represents students across all programs and aims to advise, identify issues, and foster connections. He is also a master's student in Medicine.

Sebastian Bok was studentassessor of the Faculty of Medical Sciences for the academic year 2024-2025. His main focus was on collaboration and creating a safe environment where students felt safe to make mistakes and reflect on them. He is currently pursuing two master's degrees, in Drug Innovation and in Biofabrication.

Louis Bont is the dean of the Faculty of Medical Sciences and professor of respiratory infections in childhood. He leads an internationally recognized research group in the field of respiratory infections and is, among other things, the founder of the global ReSViNET network: a network of international experts and parents of children who have had a severe RSV infection.

Marc Bonten is vice dean of education at the Faculty of Medical Sciences, professor of molecular epidemiology of infectious diseases, and Chief Executive Officer of the ECRAID foundation. He has been a principal investigator in many large scale epidemiologic studies and investigator-initiated randomized trials of prevention and treatment of infectious diseases. His education focusses on combating medical misinformation.

Niels Bovenschen is professor at the Faculty of Medical Sciences / UMC Utrecht and a principal fellow at the Centre for Academic Teaching and Learning, Utrecht University. His research group studies the immune response and develops immunotherapies targeting cancer and viral infections. Niels initiated the Student Research Hubs concept, enabling students to conduct multi-, inter-, and transdisciplinary research on socially relevant biomedical issues from the early stages of their studies.

Kiene Brillenburg Wurth is professor of Literature and New Media. She is also head of the Department of Literature/Comparative Literature in Utrecht and program director of the Medical Humanities Master's program at the same university. Kiene's research explores how literature and literary culture evolve through their interaction with other art forms – especially music – and with different media. In addition, she has specialized in interdisciplinary research on creativity, as well as in Daoist and Buddhist philosophy as frameworks for literary studies. Kiene served as head of the Humanities Department at University College Utrecht until 2020.

Marco van Brussel is affiliated as a medical (exercise) physiologist and senior researcher with the Wilhelmina Children's Hospital at UMC Utrecht. In addition, he is an associate professor of Medical Education within Meidcal Sciences and Clinical Health Sciences, with a focus on interdisciplinary and interprofessional educational innovation. For the Medical Sciences and Clinical Health Sciences programs, Marco is a coordinator (including course coordinator for the Academic Development track in the Bachelor of Medicine and for Research Design in Clinical Health Sciences), teacher, tutor, and educational innovator. In the Health, Care and Society program, he is an educational developer and lecturer in the course Early Life.

Maura Burke is editor of the Journal of Trial and Error and a PhD candidate in philosophy of science at Utrecht University. Her work aims to develop an epistemically conservative and coherent metaphysical framework capable of integrating the explanatory models of both the natural and life sciences. Maura's research further explores the philosophical foundations of the open science movement, especially focusing on promoting pluralistic approaches to the creation of knowledge.

Tessa van Charldorp is an associate professor in language & communication at the Faculty of Humanities, Utrecht University. Her work centers on studying and teaching about conversations within and surrounding healthcare settings. She is the coordinator of the Medical Humanities minor program.

Nirav Christophe is professor of Expanding Artistic Practices at HKU University of the Arts Utrecht. He writes for theater and radio, served for nine years as artistic director of the first four-year higher professional theater writing program in the Netherlands, and is an internationally renowned writing pedagogue. Nirav is an expert in creativity processes, focusing on transdisciplinary co-creation, where artists work together with non-artistic fields.

Roger Damoiseaux is head of the General Practice program in Utrecht and professor of General Practice Medicine. As a member of the College Geneeskundige Specialismen (College of Medical Specialties, CGS), he is closely involved in the development of medical postgraduate programs and the search for greater integration between the various healthcare education programs.

Gönül Dilaver is a cell biologist and completed her studies and PhD at Radboud University in Nijmegen. Gönül currently serves as an professor in Educational Innovation and Research and is the director of the BSc-program Biomedical Sciences.

Marieke Drost is a freelance researcher and trainer. She studied the history of science at the *Descartes Centre for the History and Philosophy of the Sciences and the Humanities* (Utrecht University) and the *London Centre for the History of Science, Technology and Medicine* (Imperial College & University College London). After completing her Master's in Historical and Comparative Studies of the Sciences and Humanities, Marieke worked as a science journalist for the Dutch broadcaster NTR.

Gaston Franssen is professor of Dutch Literature and Intermediality at the University of Amsterdam (UvA). His research focuses on representations of illness and health in patient narratives and illness memoirs. More specifically, he is interested in how ideologies of illness and health are either reinforced or challenged across different forms of media. Gaston has published on this topic in*Nederlandse letterkunde*, *European Journal of Cultural Studies*, and *Philosophy, Psychiatry & Psychology*.

Stefan Gaillard is co-founder of the *Journal of Trial and Error*, coordinator at The New Utrecht School, and editor-in-chief of special issues jointly published by the *Journal of Trial and Error* and The New Utrecht School on (bio)medical research and Open Education. His primary academic interests are applied ethics and epistemology, particularly in the context of how the academic community deals with error and failure. Stefan's research draws on philosophy, psychology, and game theory.

Stefan van Geelen is associate professor Philosophy in the Medical Sciences, the program manager for the educational strategy of the UMC Utrecht and the program coordinator of the interdisciplinary Medical Humanities Master's program at the Faculties of Medical Sciences and Humanities. He studied philosophy at the Faculty of Philosophy at Utrecht University and Japanese culture at Kyoto University (Japan), earned a PhD in medical psychology at the Wilhelmina Children's Hospital, worked as a researcher at the section of phenomenological psychopathology at Heidelberg University (Germany) and was a research fellow at the Swedish Collegium for Advanced Study (Sweden). Stefan is the co-founder of The New Utrecht School.

Renske van Gestel is an associate professor in the Department of Pharmaceutical Sciences at the Faculty of Science. After completing her studies in pharmacy and her doctoral research at the Faculty of Veterinary Medicine, she focused on education, working to help students develop a broad perspective on the medical field. Renske is and aprogram director of Pharmaceutical Sciences.

Wilco Hazeleger is Rector Magnificus of Utrecht University and professor of Climate System Justice. His mission is to make the university open and accessible to society. He does this by stimulating scientific disciplines, connecting them and actively collaborating with societal actors. Previously, while dean of the Faculty of Geosciences, he was closely involved in promoting diversity and inclusivity and in inter- and transdisciplinary research focused on sustainability transitions.

Carina Hilders is Chair of the Executive Board of the UMC Utrecht and professor by special appointment of Medical Management and Leadership at Erasmus University Rotterdam. Her mission is to support excellent care, innovative research and innovations in education and training at UMC Utrecht.

Arno Hoes was dean of the Faculty of Medical Sciences and vice chair of the Executive Board of UMC Utrecht. He is professor of Clinical Epidemiology in General Practice at Utrecht University and, prior to his appointment as dean, served as division head of the Julius Center for Health Sciences and Primary Care at UMC Utrecht. His research and teaching activities have focused primarily on the (early) diagnosis, treatment, and prognosis of cardiovascular diseases, as well as on the methods of clinical research.

Frank Huisman was professor of Medical History, affiliated with the Julius Center at UMC Utrecht. He was also a member of the interdisciplinary *Descartes Centre for the History and Philosophy of the Sciences and the Humanities* at Utrecht University. Frank has published on a range of topics that are central to Dutch healthcare since 1500, the role of medical history in medical education, and medical historiography.

Debbie Jaarsma studied veterinary medicine in Ghent and Utrecht. She subsequently discontinued a specialization in pathology to become a lecturer at HAS University of Applied Sciences in Den Bosch. She went on to earn her PhD in veterinary education in Utrecht and became a professor at the University of Amsterdam. From 2014, she held the chair in research and innovation in medical education in Groningen and led the LEARN research group (Lifelong Learning Education and Assessment Research Network). Since August 2021, she has been dean of the Faculty of Veterinary Medicine.

Roos de Jonge is assistant professor at the Faculty of Medical Sciences. After studying Medical Biology, Roos earned her PhD on the genetics of demyelination. She found that the research lacked societal relevance and transitioned to the role of scientific coordinator at the Princess Beatrix Fund. The birth of her daughter, who was born with a severe congenital heart defect, marked a profound turning point in her life. She now applies her (bio)medical expertise and healthcare experience in her role as ambassador for patient participation and community engaged learning at the UMC Utrecht education center.

Heleen Jumelet was chair of the Executive Board of HKU University of the Arts Utrecht. She is a social pedagogue and has published, among other subjects, on value creation through participatory governance and the paradigm shift from a welfare state to a participatory society. Prior to this, she held both managerial and research positions in the social-cultural sector, youth care, healthcare, and higher education.

Manon Kluijtmans is dean of University College Utrecht, professor of Education to Connect Science and Professional Practice, and founder of the Centre for Academic Teaching and Learning. Up until 2025, she was the vice rector for education of Utrecht University. She has a specific interest in the theoretical perspectives of professional identity development and boundary crossing. A central question in her research is how to educate dual professionals to be brokers between different fields.

Wim Kremer was vice dean of education of the Faculty of Veterinary Medicine and professor of Livestock Healthcare, with a focus on education at Utrecht University. He is, among other things, the initiator of the ZGS Bachelor's program. He is also chair of the Board of the Thomas More Foundation and a permanent deacon in the Roman Catholic Church.

Henk Kummeling is distinguished university professor and was Rector Magnificus of Utrecht University. Alongside his academic career, he has consistently held practical positions, including serving as a judge, chair of the Electoral Council, and chair of the Appeals Committee of the Dutch Ministry of Health, Welfare and Sport.

Monique van der Linden is faculty director of the Faculty of Medical Sciences and division manager of the UMC Utrecht Education Center. Previously, she was division manager of the Julius Center of the UMC Utrecht, a knowledge center for Health Sciences and Primary Care.

Elaine Mak is dean of the Faculty of Law, Economics and Governance, professor of Jurisprudence, and chair of the independent Committee for the rule of law assessment of electoral programs. Previously she was vice dean of education at the same faculty. Her research and teaching connect a legal-theoretical perspective with studies in comparative constitutional law and empirical-legal analysis.

Sanne ter Meulen-De Jong is an assistant professor at the education center of UMC Utrecht. At Biomedical Sciences, she works as an educational innovator in the field of translational medicine. Her work focuses on educational development that integrates societal engagement as a core component of biomedical research. Sanne is also affiliated with the Department of Medical Physiology as coordinator of the Master's program Cardiovascular Health & Disease.

Megan Milota is an associate professor in Narrative Medicine and works at the Julius Center for Educational Innovation at UMC Utrecht. Her work centers on incorporating greater use of experiential and patient stories into the medical curriculum. A key source of inspiration for Megan's teaching philosophy and ongoing research is the Narrative Medicine Program at Columbia University, New York, which she attended in 2016.

Rebecca van Musscher is program manager for impact at the Faculty of Law, Economics and Governance at Utrecht University and was, among other projects, involved in the realization of Akwaglot and Skyscraper (2019) at TivoliVredenburg. In 2021, she also served as the lustrum director of Utrecht University.

Mirko Noordegraaf is full professor of Public Management at the Utrecht School of Governance (USG), Utrecht University. He is also head of department at USG. From 2018 until 2023, he was vice dean for Societal Impact of the LEG faculty (Law, Economics & Governance). From 2012 until 2018, he was chair of the executive Board of USG.

Janneke Plantenga was professor of Economics of the Welfare State at the Department of Economics (USE) at Utrecht University and also served as dean of the Faculty of Law, Economics and Governance.

Ronald Poppe is associate professor at the Department of Information and Computing Sciences at the Faculty of Science of Utrecht University. His work focuses on the automated analysis of video footage to measure social behavior.

Berent Prakken is a pediatric immunologist and was vice dean of education at the Faculty of Medical Sciences. At present, he is the executive director of CHARM-EU at Utrecht University. Recognizing that the bench-to-bedside process often falls short, he co-founded the international Eureka Institute (www.eurekainstitute.org). Over time – and inspired by figures such as Pat Furlong, Casper Schoemaker, and Roos de Jonge – he has become convinced that genuine patient engagement is essential for true progress in healthcare, education, and biomedical research.

Harold van Rijen is professor of Innovative Learning Methods in Biomedical Education, director of the Graduate School of Life Sciences, and program director of Biomedical Sciences at the Education Center of UMC Utrecht. He studied Biology in Utrecht, earned his PhD at Amsterdam UMC, and worked as a medical physiologist at UMC Utrecht until 2015. He is currently primarily focused on the intersection of policy, innovation, and validation in biomedical education.

Annet van Royen-Kerkhof is the vice-rector for education at Utrecht University and is a pediatrician- immunologist at WKZ/UMCU. She served as the director of Medical Education at UMC Utrecht/UU until 2025. Her goal is to provide students with the experience of challenge-based, interdisciplinary education. Annet is co-founder of The New Utrecht School.

Nienke van Sambeek is a PhD candidate at the Verhalenbank Psychiatrie (Psychiatry Story Bank) of the UMC Utrecht. She is trained as a registered healthcare psychologist (GZ-psychologist). She also graduated in medical anthropology and sociology at the University of Amsterdam, where she developed a passion for qualitative research. Her research focuses on enhancing contextual understanding of personal recovery through the analysis of lived-experience narratives.

Ted Sanders is professor of Language Proficiency at the Faculty of Humanities and vice rector for research at Utrecht University. His research focuses on text coherence as well as clear and effective language and communication. He also led a nationwide NWO program on this topic. He was one of the initiators of the Medical Humanities Master's program.

Marieke van der Schaaf is educational scientist and professor in Research and Development of Health Professions Education at the UMC Utrecht. She is the director of the Utrecht Center for Research and Development of Health Professions Education, and of the PhD program Life Sciences in Education Research within the Graduate School of Life Sciences at Utrecht University. She serves on various scientific committees in the field of health professions education, leads several research projects, and publishes and presents on these topics together with her colleagues.

Floortje Scheepers is a (child and adolescent) psychiatrist and head of the Department of Psychiatry at UMC Utrecht. She is professor of Innovation in Psychiatry and, through her chair, is involved in various innovation projects, including the Psychiatry Story Bank. Floortje is also member of The Council for Health and Society (RVS).

Jos Schillings is director of the HKU Utrecht Conservatory. In his day-to-day work, he draws on his background as a music teacher, flutist, musicologist, and music consultant. The innovative study program Musician 3.0 was launched in 2011 under his leadership. This marked the beginning of a new international direction in music education.

Bald de Vries is the academic director of the Centre for Academic Teaching and Learning, professor of Interdisciplinary legal education and Director of Education for the Bachelor of Law. He focuses on contemporary notions of modernity and related concepts such as complexity and uncertainty, risk, precaution and sustainability, liability and responsibility, and their bearing on legal theory and law. His research helps formulating the theoretical foundations for research carried out in the Utrecht Centre for Liability and Accountability Law.

Annemarie van Wezel is dean of the Faculty of Geosciences and professor of Environmental Quality and Health. She was granted many national and international projects in which she often works inter- and transdisciplinary combining environmental sciences with earth sciences, law, innovation, engineering, ecology and/or chemistry. She is interested in the science-to-policy interface, in scientific outreach and in engagement with end-users of knowledge.

Leoniek Wijngaards is dean of the Faculty of Social and Behavioral Sciences, professor of Data use for Innovation in Higher Education, and Principal Fellow at the Centre for Academic Teaching. Her scientific interest lies in the field of multilevel analysis, and enrolment, academic achievement and diversity in Higher Education. In recent years she has directed her focus to interfaculty projects where research and educational innovation meet.

Margriet Schneider was chair of the Board of Directors at UMC Utrecht. Since 2010, she had been chair of the Division of Internal Medicine & Dermatology at UMC Utrecht and an educator in Internal Medicine. In 2011, Margriet was appointed professor of Internal Medicine at Utrecht University.

Marieke Schuurmans is trained as a health scientist and nurse. With over thirty years of experience in patient care, education, and research, she brought a wealth of expertise to her former role as chief healthcare organization at the Dutch Healthcare Authority, a position she has held since 2021. At present, she is pro-dean of education for the Board of the University Medical Center Groningen.

Tatjana Seute has been working as a neurologist/neuro-oncologist at UMC Utrecht since 2006. On February 1, 2021, she was appointed professor of Neuro-Oncology, with the mission to advance collaboration with and for patients to a higher level. She combines clinical work with her role as neurology educator. As chair of the Central Education Committee at UMC Utrecht, Tatjana aims to innovate postgraduate medical training through open dialogue, co-creation, and collaboration with all partners in the care chain.

Veerle Siebinga is a physician-researcher involved in the development and application for the Medical Humanities Master's program.

Thomas Vaessens is dean of the Faculty of Humanities at Utrecht University. After earning his PhD in Utrecht (1998), he held positions including professor of Dutch Literature and vice dean of research at the University of Amsterdam, and dean of Cultural Studies at the Open University. Thomas served as academic director of two national research schools – the Huizinga Institute and the Research School for Literary Studies – and is a member of the Royal Holland Society of Sciences and Humanities.

Gisela van der Velden is a molecular biologist. After completing a PhD in virology and a two-year postdoctoral project on antibiotic resistance, she shifted her focus to education policy in Biomedical Sciences at Utrecht University. It was here that she first became involved with Diversity & Inclusion (D&I). She is currently an assistant professor in Biomedical Sciences, where they develop and teach courses on the importance of D&I in research, provide training for faculty, and conduct educational research.

Alex Visser graduated in 2021 with a Bachelor in Political Philosophy and Ethics from Utrecht University, with a specialization in Political Philosophy and International Relations. Their primary focus is on societal issues related to security and justice, radicalization and extremism, and political participation. Alex has been involved with the *Journal of Trial and Error* since 2018, originally as secretary and editor-in-chief. Since 2020, they have been managing the team as project leader in its daily activities.

Within The New Utrecht School, Utrecht University, HKU University of the Arts Utrecht, and the University Medical Center Utrecht join forces to equip a new generation of professionals for the challenges of the 21st century.

This collection explores the shared tradition with the historical Utrecht School. In addition, innovators from a variety of disciplines share their cutting-edge, impactful, and sustainable approaches to creating a future-proof academic landscape.

With contributions from:

Isabel Arends • Bert Arets • Marcel van Aken • Silvester Beelen • Sebastian Bok Louis Bont • Marc Bonten • Niels Bovenschen • Kiene Brillenburg Wurth Marco van Brussel • Maura Burke • Tessa van Charldorp • Nirav Christophe Roger Damoiseaux • Gönül Dilaver • Marieke Drost • Gaston Franssen • Stefan Gaillard Stefan van Geelen • Renske van Gestel • Wilco Hazeleger • Carina Hilders Arno Hoes • Frank Huisman • Debbie Jaarsma • Roos de Jonge • Heleen Jumelet Manon Kluijtmans • Wim Kremer • Henk Kummeling • Monique van der Linden Elaine Mak • Sanne ter Meulen - de Jong • Megan Milota • Rebecca van Musscher Mirko Noordegraaf • Janneke Plantenga • Ronald Poppe • Berent Prakken Harold van Rijen • Annet van Royen-Kerkhof • Nienke van Sambeek • Ted Sanders Marieke van der Schaaf • Floortje Scheepers • Jos Schillings • Margriet Schneider Marieke Schuurmans • Tatjana Seute • Veerle Siebinga • Thomas Vaessens Gisela van der Velden • Alex Visser • Bald de Vries • Annemarie van Wezel Leoniek Wijngaards