Introduction

Hope and Uncertainty in Health and Medicine

Bernhard Hadolt and Andrea Stöckl

This edited volume originates from the *XI Medical Anthropology at Home (MAAH) Conference* "Transfigurations of Uncertainty in Health and Medicine," held at the University of Vienna and the Schüttkasten Geras, Austria, in October 2021.[1] Most chapters assembled here have been discussed in a draft version at this four-day working conference. True to the tradition of MAAH conferences, the conference was held at a pleasant and somewhat remote venue, providing an ideal setting for intense scholarly work and collaboration. This event marked a significant moment, as it was the first in-person international academic gathering for most participants after the disruptions caused by the COVID-19 pandemic, due to which it had to be postponed twice. The palpable joy and relief of being able to meet and collaborate face-to-face set the tone for the conference. Initially centred around the theme of transfigurations of uncertainty, the communal rejuvenation and scholarly exchange inspired the idea for this volume, bringing the theme of hope into a more prominent position.

In our interconnected and polycentric world, certainty and uncertainty of knowledge are central to how health and medicine are organised, experienced, and practised. Despite the rapidly growing extension of evidence-based knowledge, this very knowledge, its reliability, validity, and relevance, has become contested. Sometimes populism, scepticism, or plain hostility towards science, and "alternative facts" and "fake news" replace informed debates. This crisis of knowledge-informed practices becomes particularly relevant in contexts of suffering, illness, and dying when the viability and well-being of oneself and those close to us are at stake. In these moments, traditional ways of coping are called into question. As medical

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anthropologists have already long ago emphasised, the pursuit of certainty, but also the value of uncertainty has been a defining feature in most medical practices, as Van der Geest demonstrates in his contribution to this volume. This is the case especially for diagnosis and subsequent treatment options (e.g., Jenkins et al. 2005; Lupton 1995; Nissen and Risør 2018; Street 2014; Van Dongen 1998; Whyte 1997). In this modality, this quest and the uncertainty that arises are inherent in medical practice per se but also result from the interconnectedness of diverse heterogeneous social domains and processes. These are linked to factors such as neoliberalism, the leaping pace of technological innovation, and shifting political alliances, to count a few (Andersen, this volume).

As an analytical tool, uncertainty can be conceptualised as a genuine epistemological crisis in current medical practice and an ontological state for patients and practitioners immersed in the above-described nexus. What are the key modes of current uncertainties in health and medicine, and how do they emerge? How do they shape and yield medical practices, discourses, and environments? How can we make sense of the dynamic interconnectivity that links medicine with many other societal domains, such as policymaking, public administration, scientific research, the private profit-making sector, humanitarian work, the media, religion, or law? In which ways are they generating forms of uncertainty? How can we comprehend health-related phenomena and the implicated uncertainties as they manifest and change over time—sometimes incrementally, sometimes abruptly—in different practices, configurations, and atmospheres? Finally, how can we make sense of the apprehensions, concerns, hopes, imagined futures, and feelings of the people who affect and are affected by such processes as they constitute themselves in their specific life-world? These questions informed our conference in essential ways.

In health and medicine, imagining what the future holds is essential in propelling people into action. This is true not only at the level of individuals who envision and carry out everyday activities and long-term plans but also for institutional practices framed by and unfolding within socio-political ecologies and transfigurations (Adams et al. 2009; Kehr et al. 2019; Mattes et al. 2020; Taussig et al. 2013). Hope and uncertainty, as key affective and knowledge-related modalities of such imaginations, assume meanings in policing and managing health, illness, and wellbeing (Novas 2006; Chattoo, this volume). Alongside "risk talk," medical practice has always been underpinned by a discourse on hope and the potentiality for a better future (Fainzang 2017; Good et al. 1990; Konrad 2005; Mattingly 2010). The proclaimed medical revolutions, such as the definite cancer cure, have characterised medical popular discourse and imagination ever since the significant technological revolutions of the 19th and 20th centuries. Contemporary versions of such discourses focus on the usages of synthetic biology, gene editing, and Big Data and artificial intelligence (Kirksey 2021). The digitalisation of medicine and patients' health care data has informed public debates for the last twenty years. They gained new momen-

tum with the hype around powerful artificial intelligence tools like ChatGPT in 2023 (Ruckenstein and Schüll 2017; see also Heitger, this volume). Public health officials often employ a discourse of the "technical fix" of medical problems (Layne 2000) and of prevention and risk to tame uncertainty by framing questions of factuality and potentiality in terms of probability (Stöckl 2010; Taussig et al. 2013; Modelhart, this volume). In doing so, they contribute to a general climate of uncertainty, for example, in debates about controlling epidemics and pandemics. This approach is increasingly politicised, particularly concerning the future impact of climate change on health and illness and what is referred to as planetary health (Singer et al. 2022; Baer and Singer 2023).

When examining medical technologies, infrastructures, and materialities, the technological advances of diagnostic and therapeutic medical procedures and the—expected and unexpected—field of action that they afford have both facilitated and impeded innovation (Hogle 2005; Lock 2013; Mattes 2019; Reinsch, this volume). This is partly due to the pace at which bureaucracy and the specific governance of its application often lag. In the UK, for instance, policymakers allow for the innovative use of ultrasound in the private sector for keepsake purposes but prohibit its portable use for diagnostics in general practitioner surgeries (Smajdor and Stöckl 2018). The increasing need for individual data protection has significantly augmented bureaucratic burdens on researchers and medical practitioners, leading to new professional roles such as data managers and artificial intelligence specialists. These emerging professions deal with the spaces of uncertainty that Big Data and its sophisticated processing produce (Hunt et al. 2017). Technologically intensive medical procedures, such as remote surgery, alter the dynamics between medical practitioners and patients as well as between different generations of practitioners. Body parts and substances are being further decontextualized from real humans and re-contextualised in new ways than ever in medical history (Landecker 2000; Waldby and Mitchell 2006; Hadolt, this volume). Tablet computers, mobile phones, and various software applications are increasingly used in settings such as psychotherapy (Stöckl, this volume). In rural areas of the Global South, medical information, such as ultrasound images, is transmitted to specialised medical centres for diagnostic purposes, creating an impression of diagnostic certainty (Hunt et al. 2017; Lupton 2018; Oudshoorn 2011). While these technologies offer an opportunity for improved diagnosis, they also contribute to the lack of funding for rural areas. The relationship between the Global South and the Global North affects how medical products and services are produced and distributed and how ideas, materials, and people travel. This relationship also shapes research practices, including clinical trials, stem cell research, and their associated ethical dilemmas (Abdalla 2018; Cohen 2005; Müller-Rockstroh 2012; Sunder Rajan 2007).

The dual nature of uncertainty and hope is also evident in moral quandaries and health policing. Ethical and moral dilemmas in medicine and medical research

practice have contributed to the development of new legal practices in some countries but not in others, e.g., fostering medical tourism within and beyond the EU due to these disparities (e.g., De Looze 2016; Inhorn 2003; Petryna et al. 2006; Wailoo et al. 2010). The commodification of health, particularly in the case of personalized medical devices such as self-tracking wearables and ultrasound keepsakes, has furthered this trend. They introduce new means of quantifying and economizing health and healthcare, including changes in health insurance regimes (Farrington and Lynch 2018; Heitger, this volume). The advent of gene editing raises moral questions about accessibility and equity in its benefits (Kirksey 2021). Biorepositories, while helping to identify trends in population health, often oversimplify individuals into mere data points removed from their diverse life contexts. At the public health level, various modes of moralities and new alliances, such as those between NGOs and large corporations, e.g., in vaccination policies funded by big businesses, are observed (Graham 2016). Unregulated technologies generate vast amounts of data, which could potentially be used to shape public health policies in ways that might favour stakeholders' interests over the public good. There is a widespread demand for certainty from the public, medical practitioners, researchers, and companies, a demand that policymakers, legal courts, and public health, with their discourse on probability, often struggle to fulfill.

The role of affectivities and social atmospheres must also be addressed when examining hope and uncertainty in health and medicine. Emotions, affects, and feelings not only play a part in how individuals make decisions about their care for themselves and others (Hadolt 2018; Démolis, Buclin and Foley, this volume; Hsu, this volume) but also significantly impact organisational practices and policy making in public health (Martin 2007; Novas 2006; Fortin and Lessard, this volume; Risør and Nissen, this volume). As uncertainties proliferate, so do anxieties. Policymakers often rely on psychological concepts such as resilience and coping strategies rather than addressing anxieties. This fosters a trend toward expecting populations to be more resilient, particularly in facing health challenges related to aging, lifestyle choices, and climate change. The emphasis on self-optimization and individual responsibility in policymaking contributes to new subjectivities of health and illness, often creating a misleading sense of certainty based on quantifiable data (Rose 2007). At the individual level, people frequently cope with these uncertainties and responsibilities by turning to conspiracy theories and misinformation, such as the unfounded belief about vaccinations and refugees being responsible for spreading diseases (Drążkiewicz 2023).

This volume is organised into four parts: (1) *Pragmatics of hope and uncertainty* explores the broader conceptual and moral aspects of uncertainty and hope in healthcare, challenging traditional medical reasoning and underscoring the value of embracing ambiguity in medical ethics and decision-making. (2) *The techno-sphere* investigates the role of emerging technologies in medical and health-related practices

and identities, examining the intertwining of medical uncertainty and potential implicated in medical advancements in self-knowing, therapeutic, and diagnostic decision-making, and novel understandings of bodily processes. (3) *Health management* analyses the adaptation of health policies and practices in response to technological and socio-material shifts, addressing issues like antimicrobial resistance, polypharmacy, and the development of tele-mental health. (4) Finally, the part on *Individual and socially distributed emotions* focuses on the affective and social dimensions within health contexts, discussing the interplay of affectivity and sociality in negotiations about medical diagnosis, the experience of (non)recovery in chronic conditions, and socio-material practices surrounding fermented foods and their health benefits.

Pragmatics of hope and uncertainty

We enter the discourse with a section on pragmatics of hope and uncertainty. This section explores the broader conceptual and moral implications of uncertainty in meaning-making in health and medicine, opening the space for a nuanced balance between embracing uncertainty and navigating ethical responsibilities in complex medical scenarios.

Sjaak van der Geest invites us to ponder whether uncertainty might also be a good thing and whether we should embrace it rather than try to eliminate it. He takes us on a journey through debates from philosophy to moral and spiritual guidance to art and psychology, showing that the importance of accepting uncertainty is increasingly debated as a standpoint. There is even "wisdom" and "courage" to be found in not knowing, and "agnosticism" is gaining acknowledgment as the only "rational" position, not just in religious contexts. He reflects upon debates in anthropology, and here especially in medical anthropology, with the unease to conceptualize the human person as a rational being or as a machine and argues that rationality became rationalization in that we do things and produce a reason afterwards. In his deliberation on the embrace of uncertainty, Van der Geest also reminds us that being able to do so might be a privilege that not all social actors can embrace, e.g., doctors who must decide to treat someone regardless of whether the intervention might work or not. Yet, he concludes, there is growing recognition that uncertainty could be seen as a superior way of knowing and, contrary to what we might believe, is not a "destroyer of hope."

Sylvie Fortin and Sabrina Lessard follow this introduction to the theme by analysing fieldwork carried out in Paris and Montreal in paediatric intensive care and haematology-oncology units as well as in geriatric hospital wards and long-term care facilities. They explore how the evolving landscape of medical and pharmaceutical advancements blurs the lines between disease-directed and palliative care, especially as formerly fatal illnesses become chronic. This transformation

alters the therapeutic project in cases of life-limiting illnesses or critical conditions. Physicians are sometimes inclined towards a palliative approach, providing active treatments that prolong life, whether briefly or for an extended period, while prioritizing patient comfort. Alternatively, the promise of scientific research and innovation can inspire a more proactive medical approach, fuelling a cycle of hope and trust. Fortin and Lessard draw our attention to issues of timeliness: when biomedicine is seen as supporting life, a trade-off between enduring never-ending treatments now for potentially better times ahead becomes apparent. They show how doctors and other healthcare providers grapple with this balance between immediate quality of life and life extension, challenging traditional notions of care and ethical responsibilities. In settings characterised by uncertainty, hope, and trust, the moral roles of doctors and other healthcare providers as caregivers are complex, sustaining action, even in the face of the likelihood of death.

The techno-sphere

The second part of the collection deals with the increasing impact of the technosphere on our understanding of what it means to be human or, indeed, to become a human being. It investigates how emerging (and old) health practices and technologies, including self-tracking and novel medical treatments, are reshaping medical and health-related practices both inside and outside hospital settings, presenting both challenges and opportunities for shifting policies, comprehension, and ways of dealing with health problems.

Anna Heitger starts the discussion with a chapter that focuses on the practice of self-tracking in health and fitness. Drawing on ethnographic research conducted between 2017 and 2019 with users of self-tracking technologies and self-tracking start-ups in Vienna and Berlin, she explores how self-tracking as a practice and entrepreneurship intersects with the broader themes of health management, the role of technology in personal wellbeing, and the quest for deeper self-knowledge through data. Heitger argues that self-tracking practices, which lie at the fringes of medical expertise, challenge the traditional boundaries between medical and non-medical practices. They foster a new way of "doing health" by quantifying activities, bodily states, and processes, making health a continuous individual responsibility. It transforms health from being a state to an ongoing practice in which users navigate their lives and well-being as informed, responsible citizen and consumers. The self-tracked body, constantly objectified in its quantifiable aspects e.g., water intake, heart rate, and sleep pattern, becomes the site of both concern and doing health, where users attempt to take charge of their health-related behaviour. While the past appears as fixed, represented by the recorded data that can be accessed at any time, the potential for change lies in the openness of the very present and

the ontological uncertainty of the body's future state, opening possible pathways to better future wellbeing and thus creating a sense of hope in a broad, more general way. Heitger concludes that self-tracking technologies and their mobilisation in "doing health" can be interpreted as part of an increasing individualization, responsibilisation, and economization of health in general.

In her ethnography, based on fieldwork carried out between 2017 and 2019, Sangeeta Chattoo takes us to another continent, namely India. She delves into the experiences of patients and their carers dealing with thalassemia, a severe, potentially life-threatening blood disorder, and their decision-making regarding the use of thalidomide, a controversial treatment within clinical literature and practice. Her chapter highlights the complexities and uncertainties inherent in choosing this novel therapy within the broader context of a "political economy of hope and caring," challenging conventional understandings of medical evidence. The ongoing debate about thalidomide's safety and effectiveness in treating thalassemia highlights the intricate hierarchy in clinical practice that determines how evidence is used to justify medical improvisation and change. Chattoo aims to understand the motivations and therapeutic paths of those seeking new treatments amidst uncertainty and financial burden. The analysis is framed theoretically around the concepts of potentiality and precarity. It sheds light on the importance of the context in which the material reality of the disease and the risks, uncertainties, and hopes associated with new treatments unfold over time. This exploration into uncharted therapeutic terrain blurs the lines between treatment and cure, shifting the focus to the everyday, often mundane aspects of ongoing care. This perspective challenges us to consider the "ordinary, chronic and cruddy" nature of care in the face of chronic illness. With her contribution, Chattoo also contributes to an understanding of how novel therapies create new perspectives on timeliness.

Stefan Reinsch's chapter further explores how novel technologies are changing the perception and implementation of medical interventions in clinical practice. Based on his ethnographic studies with German women, Reinsch describes how since 2012 pregnant women in Germany have been able to opt for non-invasive prenatal testing (NIPT) for inherited genetic conditions. This test, which only requires a blood sample from the mother, presents a safer alternative to amniocentesis, which carries a risk of inducing miscarriage. He argues that in societies driven by neoliberal and techno-scientific values, the "elimination of risk" and the "promise of knowledge" are powerful cultural narratives. Using two detailed case studies of women's involvement in NIPT, Reinsch examines how the introduction of NIPT affects the way prenatal genetic diagnostics are perceived and utilized. He notes that while NIPT aids in normalizing prenatal genetic testing, it also brings with it new uncertainties, particularly regarding potential disability and its impact on family dynamics. He argues that women are not only succumbing to technology; rather, some use NIPT pragmatically as a means of gaining knowledge, viewing it

as a tool in the logic of testing and preventing disability. Conversely, other women decide against NIPT, wary of its implicit demands and obligations. Instead, in an alternative but complementary logic of caring, they prioritize the embodied and experiential knowledge they gain from the natural course of pregnancy and their developing bond with their unborn child. Reinsch's work thus illuminates the nuanced ways women navigate the evolving landscape of prenatal technology, balancing the promises of scientific advancement with personal beliefs and values.

Bernhard Hadolt's contribution, the last in this part of the book, also deals with reproduction. Drawing on ethnographic fieldwork in Austrian fertility clinics, Hadolt explores the complex interplay of hope, uncertainty, and temporality that defines In-vitro fertilization (IVF) as social practice in important ways. In following IVF users through the dramatic ups and downs of their quest for a baby, he highlights the situated and intentional nature of IVF users' experiences, underscoring their essentially pragmatic stance and the pivotal role of hope as a driving force in navigating the uncertainties and challenges of the treatment process. This hope, however, is not unbridled but is carefully modulated to balance the desire for a successful outcome with the risk of potential failure. The author argues that hope, in its relationally distributed form, is an integral part of the social practice of IVF, organizing the actions and decisions of those involved and sustaining IVF treatment. In this regard, Hadolt points to the unique temporal dynamics of IVF, where the journey towards pregnancy is marked by distinct phases, each with its own emotional and practical challenges. The cumulative nature of IVF, where each step must be successfully mastered to maintain the possibility of pregnancy, creates a temporal structure characterized by immediate, short-term goals juxtaposed with the overarching goal of achieving pregnancy and parenthood. Hope resides in uncertainty about *what is*, *what will happen*, and *how best to deal with it*. Using knowledge as a tool to manage uncertainty can paradoxically increase it, as is evident in the final phase of IVF treatment, embryo transfer, and implantation. Detailed medical knowledge about what can "go wrong," inconclusive pregnancy test results and certain bodily feelings may lead to situations where being pregnant is not simply binary but can be understood in gradations as being "a little bit pregnant" that requires work to make the pregnancy "real."

Health management

In the third part of the book, we look at how health management and governance deal with the challenges brought about by the developments in the technosphere. This section delves into how these developments, along with broader socio-material issues related to ways of living and the pandemic crisis, reshape practices, policies, and perceptions within the health sector.

We first follow Rikke Sand Andersen's analysis of the rise in solo living as a global trend and its repercussions on the politics of care. Andersen explains that in Denmark, where she conducted extensive ethnographic fieldwork on the topic from 2020 to 2021, solo living is supported by an egalitarian approach to caregiving and is considered a conventional lifestyle choice. However, in many societies, solo living intersects with the ongoing normalization of family and private homes as primary settings for caregiving. Drawing on critical feminist care theory and discussions of vulnerability to understand human subjectivity, Andersen embarks on a journey to uncover the evolving landscape of the social organization of care work in Denmark. Furthermore, she explores the vulnerabilities and social dynamics that become apparent within these emerging contexts. Through a careful examination of two cases of two cancer patients living alone, Andersen investigates how individuals living alone navigate their daily lives within the realm of cancer care. Reminding us that vulnerability is not an inherently personal trait but is instead shaped by structures of power, privilege, and oppression, she identifies two key types of what she considers emerging vulnerabilities: relational vulnerabilities, which refer to the growing social and moral tensions that surface when seeking access to care, and vulnerabilities to the self, which Andersen defines as "the loss of abilities to engage in world-making activities." She argues that care politics itself is the "architect" of human vulnerabilities, producing both relational vulnerabilities and vulnerabilities to the self. The current interplay between caregiving and embodied existence in Denmark makes solo living in severe disease possible yet extraordinarily challenging.

Antonia Modelhart's chapter looks at antimicrobial resistance (AMR) in German hospitals and the threat that AMR poses to both global health and the individual health of patients and those working there. Based on interviews Modelhart conducted with hospital hygiene specialists who work in and outside of hospitals in Hamburg, Germany (mainly nurses and physicians, but also researchers in academia and patients), she describes how these professionals understand and deal with the increasing challenge of bacterial resistance and the decreasing effectiveness of antibiotics. Using the analytical lens of microbiopolitics and the intricate dynamics and negotiations involved in managing microbial life, she examines the vibrant interactions between humans and microbes as they manifest in hospital hygiene policies and practices employed by hospital hygiene management teams. Given the fundamental uncertainty concerning bacterial composition, patient resilience, the case-specific effectiveness of antimicrobial therapy, and the uncertain future of antibiotics in general, these practices, among which risk-adapted screening of patients is critical, are characterised by a careful case-by-case and day-to-day assessment and governance of microbe-human interactions that consider the specific "microbiologies" at a place as they evolve. Modelhart argues that this approach to dealing with the risk of antimicrobial resistance echoes post-Pasteurian biopolitical thinking. This promotes a more nuanced understanding of microbial

life that acknowledges the ubiquitous and often beneficial presence of microbes and their complex relationships with human health. It promotes hygiene strategies that aim at managing bacterial compositions and preventing infection rather than eliminating colonization.

In the next chapter in this section, Rachel Démolis, Thierry Buclin, and Rose-Anna Foley discuss the complex and often overlooked issue of polypharmacy among older people in Switzerland. The authors shed light on the paradoxical reality faced by these polymedicated elderly patients, who find themselves in a dilemma between the need to take multiple drugs for chronic conditions and the awareness of potential adverse effects and insufficient research on drug interactions. The authors explore the subjective experiences of these elderly patients and how they give meaning to these experiences. They describe how they find strategies in dealing with iatrogenic risk and related uncertainty and perceive and interpret their illnesses and healthcare practices. This exploration is framed within a larger socio-cultural context, considering the impact of economic, institutional, cultural, and political factors on the patients' narratives and healthcare experiences. Démolis, Buclin, and Foley argue for an approach to understanding such health dynamics that moves beyond the conventional analysis of macro-social dimensions that determine health behaviour. Instead, they emphasise a more fluid and interactive process in which the roles of health professionals, health insurance policies, and patients are not static; they evolve concerning patients' "lay vigilance" over their polypharmacy, highlighting the importance of considering patient agency. Patients' control over the temporality in which they live, whether in terms of linear "chronos time" or "kairotic moments" (as in medication accidents), is crucial here.

In the last chapter in the third section, Andrea Stöckl, a social-cultural anthropologist and a psychotherapist by training, reflects on her experiences as a newly qualified psychotherapist practicing in pandemic times in Austria. Using an autoethnographic perspective and focussing on somatic attention, she analyses the impact of delivering online therapy and the challenges of bringing together ethical and legal regulations, technical knowledge, and the need for clients to remain in contact when everything else seemed to fall apart. She sets her own experiences in the context of the rapidly changing field of telemedicine and mental health. Clients have actively driven this change because of the ever-growing demand for psychological help in uncertain times. While the professional body of psychotherapists in Austria has viewed the delivery of mental health care via technology with scepticism due to their stance that it is the direct interpersonal relationship between therapist and client that drives the healing process, clients have welcomed the integration of tools such as Skype, Zoom and WhatsApp because it allowed them to engage in the therapy process from the comfort and safe space of their own home. Legal considerations propose that therapists had no special training in online training, were not aware of the pitfalls of data protection issues, and thus would find it difficult to guar-

antee the privacy of the treatment. Continuous professional training has caught up with these issues in the meantime. Privacy is one of the cornerstones of successful therapy. Thus, the notion of trust would have to be renegotiated to make an already impossible professional relationship more certain and trustworthy. Stöckl looks at some areas of the relationship between clients and therapists that might have to be rewritten while using online therapy, one of them being the corporeal part of the encounter.

Individual and socially distributed emotions

We have arrived at the book's last section, which looks at individual and socially distributed emotions. In this section, we take a journey from Norway to Spain and France, and finally to Switzerland, exploring the affective and social dynamics of health and illness related to diagnosis-making, fighting for recovery, and the culinary art of producing and consuming fermented foods.

Mette Bech Risør and Nina Nissen examine the diagnostic processes surrounding chronic fatigue syndrome (CFS) as they take shape in Norway. They argue that despite the perception of biomedical knowledge as indisputable, there is often a significant level of epistemic uncertainty associated with these processes. This uncertainty is particularly pronounced when symptoms do not conform to established disease models. Drawing from their ethnographic fieldwork conducted at a Norwegian university hospital, they show that this discrepancy frequently arises in cases of chronic fatigue, leading to complex processes of diagnostic negotiations in which, against the backdrop of various factors such as health agendas, bodily experiences, and relational competences, the mutual and situational involvement of the actors (doctors, psychologists, occupational therapists, patients) is central. The authors emphasize that the affective aspects of the clinical encounter play a pivotal role in comprehending the diagnostic journey, showing that these encounters are influenced by biomedical expertise, institutional routines, and the neoliberal approach to healthcare, all of which contribute to a multifaceted web of concerns and interests involving all participants. By drawing on the notions of affective atmosphere and affective attunement, Risør and Nissen show how patients and health professionals, and health professionals with each other, become affectively aligned or synchronised in an intersubjective process of diagnostic assessment, contributing to the potential for change, understanding, and movement in the diagnostic and treatment processes. Highlighting the affinity between affect, hope, and potential, the authors suggest that hope anticipates what has not yet materialized, and the disposition of hopefulness can have a transformative effect on suffering individuals; hope is an "ability to affect and be affected by the world".

The second chapter in this section by Lina Masana takes us not only to Spain and France but also on a journey through the lives of people who live with locked-in syndrome (LIS). LIS, which in most cases results from a stroke in the brainstem or in connection with neurodegenerative disease, is characterised by the fact that those affected are, to varying degrees, unable to move (quadriplegic) or speak (anarthric), while remaining conscious, mentally alert, and able to see, hear, and feel, and most importantly by its poor and highly uncertain prognosis. In her chapter, Masana explores LIS with a focus on the challenge of this rare medical condition to the notion of recovery among healthcare professionals, patients, and their families. Based on ethnographic research about people living with LIS carried out in France and Spain from 2019 to 2021, she looks at the lived experience of LIS from the perspective of those suffering from it as they "fight" for recovery. The author argues that living with LIS and the prospects of recovery are marked by what she calls the "certain uncertainty of LIS": very few may fully recover from LIS, some may not recover at all, and many will experience varying degrees of partial recovery. Mapping the high variability of LIS in the illness trajectories of those affected, Masana shows that fighting for recovery comes with significant financial, emotional, and moral burdens. It requires access to technical aids and continuous, specialized professional care over the years, coupled with the persistence and personal commitment of those affected. Nevertheless, some individuals dedicate themselves tirelessly to this process, while others do not. The reasons include various factors such as personal health situation, professional support, family backing, living conditions, and financial resources. Essentially, the pursuit of recovery with LIS is an endeavour against uncertainty and odds and a challenge to medical prognosis. It is, Masana says, about regaining control over their changed lives and bodies. She concludes by pointing out that "fighting" for recovery in LIS is controversial because the notion assumes a medically created certainty based on inherent uncertainties.

In the final chapter of this volume, Elisabeth Hsu takes us on a very real journey through mountainous and rural parts of Switzerland. Her inquiry focuses on the distinctive aspects of various culinary techniques that facilitate fermentation and how these methods and the connected social practices foster socialities that have potential health benefits. Drawing on various chance encounters that Hsu made over the years during her visits to Switzerland, the empirical basis for her analysis is detailed ethnographic snapshots rather than the outcome of a systematic research project. She presents four vignettes that relate to the lived experience of people involved in the various processes around the production and consumption of fermented food: wine and cheese-making in the Italian-speaking canton Ticino, government-supported community events involving the consumption of alcoholic beverages during the *Adventszeit* (the period before Christmas) in villages at the French-speaking border in the region of the Jura and the Romansch-speaking part of the Engadin respectively, and a baked cake in the German-speaking canton of Appenzell.

Based on her delicately written descriptions of her encounters with the socialities that form around fermentation, Hsu argues that they best be understood as "figurations of fermentation", emphasising affective processes and atmospheric changes that also include alterations in the "body ecologic". Despite the many uncertainties inherent to processes of fermentation, fermentation as a socio-ecological figuration is a way of place-making, "empotment" in Hsu's terms. By forming and cultivating connections and interspecies dependences with the local environment and its specific materiality, fermentation as a "culinary art" both contributes to the specific materiality of a particular place and fosters a sense of connectedness and belonging for those humans "enskilled" in producing and consuming fermented foods.

In sum, this volume presents a rich tapestry of perspectives on hope and uncertainty in health and medicine. It offers insights into how these phenomena are experienced, navigated, and managed across various cultural, social, and institutional contexts and how they are entangled with the infrastructure and material culture within and beyond medicine. The volume aims to deepen our understanding of the complexities and dynamics at the intersection of health, hope, and uncertainty through its diversity of contributions.

References

Abdalla, Mustafa. 2018. Transfigurative Experiences of Sickness: Medical Regimes, Disease Commodification, and Professional Patients in Egypt. Zeitschrift für Ethnologie 143(1): 21–39.

Adams, Vincanne, M. Michelle Murphy, and Adele E. Clarke. 2009. Anticipation: Technoscience, Life, Affect, Temporality. Subjectivity 28: 246–265.

Baer, Hans, and Merrill Singer. 2023. Planetary Health: Capitalism, Ecology and Eco-Socialism. Capitalism Nature Socialism 34(4): 20–38.

Cohen, Lawrence. 2005. Operability, Bioavailability, and Exception. *In* Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems. Aihwa Ong and Stephen J. Collier, eds. Pp. 79–90. Malden: Blackwell Publishing.

Drążkiewicz, Elżbieta. 2023. Are You With Us or Against Us?: Studying Conflicts Over Conspiracy Theories and Overcoming the Great Conspiratorial Divide. Anthropology in Action 30(1): 12–23.

De Looze, Karen. 2016. India's Kidney Belt and Medical Tourism: A Double-Edged Sword. *In* Organ Transplantation in Times of Donor Shortage. Ralf J. Jox, Galia Assadi, and Georg Marckmann, eds. Pp. 271–284. Heidelberg: Springer.

Fainzang, Sylvie. 2017. Self-Medication and Society: Mirages of Autonomy. London: Routledge.

Farrington, Conor, and Rebecca Lynch. 2018. Personal Medical Devices: People and Technology in the Context of Health, *In* Quantified Lives and Vital Data: Explor-

ing Health and Technology through Personal Medical Devices. Rebecca Lynch and Conor Farrington, eds. Pp. 3–16. London: Palgrave Macmillan.

Good, Mary-Jo DelVeechio, Byron J. Good, Cynthia Schaffer, and Stuart E. Lind. 1990. American Oncology and the Discourse of Hope. Culture, Medicine and Psychiatry 14(1): 59–79.

Graham, Janice. 2016. Ambiguous Capture: Collaborative Capitalism and the Meningitis Vaccine Project. Medical Anthropology 35(5): 419–432.

Hadolt, Bernhard. 2018. A Desire for Knowing: Ontological Uncertainty, Diagnostic Evidence and Generative Affectivity in Pre-symptomatic Genetic Counselling. *In* Diagnostic Fluidity: Working with Uncertainty and Mutability. Nina Nissen and Mette Bech Risør, eds. Pp. 129–147. Tarragona: Publicacions URV.

Hogle, Linda F. 2005. Enhancement Technologies and the Body. Annual Review of Anthropology 34(1): 695–716.

Hunt, Linda M., Hannah S. Bell, Allison M. Baker, and Heather A. Howard. 2017. Electronic Health Records and the Disappearing Patient. Medical Anthropology Quarterly 31(3): 403–421.

Jenkins, Richard, Hanne Jessen, and Vibeke Steffen, eds. 2005. Managing Uncertainty: Ethnographic Studies of Illness, Risk and the Struggle for Control. Copenhagen: Museum Tusculanum Press.

Inhorn, Marcia Claire. 2003. Local Babies, Global Science: Gender, Religion, and In Vitro Fertilization in Egypt. London: Routledge.

Kehr, Janina, Hansjörg Dilger, and Peter van Eeuwijk. 2019. Transfigurations of Health and the Moral Economy of Medicine: Subjectivities, Materialities, Values. Zeitschrift Für Ethnologie 143(1): 1–20.

Kirksey, Eben. 2021. The Mutant Project: Inside the Global Race to Genetically Modify Humans. Bristol: Bristol University Press.

Konrad, Monica. 2005. Narrating the New Predictive Genetics: Ethics, Ethnography, and Science. Cambridge: Cambridge University Press.

Landecker, Hannah. 2000. Immortality, In Vitro: A History of the HeLa Cell Line. *In* Biotechnology and Culture: Bodies, Anxieties, Ethics. Paul E. Brodwin, ed. Pp. 53–72. Bloomington: Indiana University Press.

Landecker, Hannah. 2007. Culturing Life: How Cells Became Technologies. Cambridge, MA: Harvard University Press.

Layne, Linda L. 2000. The Cultural Fix: An Anthropological Contribution to Science and Technology Studies. Science, Technology & Human Values 25(4): 492–519.

Lock, Margaret. 2013. The Epigenome and Nature/Nurture Reunification: A Challenge for Anthropology. Medical Anthropology 32(4): 291–308.

Lupton, Deborah. 1995. The Imperative of Health: Public Health and the Regulated Body. London: Sage.

Lupton, Deborah 2018. Digital Health: Critical and Cross-Disciplinary Perspectives. New York: Routledge.

Martin, Emily. 2007. Bipolar Expeditions: Mania and Depression in American Culture. Princeton: Princeton University Press.

Mattes, Dominik. 2019. Fierce Medicines, Fragile Socialities: Grounding Global HIV Treatment in Tanzania. Oxford: Berghahn.

Mattes, Dominik, Bernhard Hadolt, and Brigit Obrist. 2020. Introduction: Rethinking Sociality and Health through Transfiguration. MAT-Medical Anthropology Theory 7(1): 66–86.

Mattingly, Cheryl F. 2010. The Paradox of Hope: Journeys through a Clinical Borderland. Berkeley, CA: University of California Press

Müller-Rockstroh, Babette. 2012. Appropriate and Appropriated Technology: Lessons Learned from Ultrasound in Tanzania. Medical Anthropology 31(3): 196–212.

Nissen, Nina, and Mette Bech Risør, eds. 2018. Diagnostic Fluidity: Working with Uncertainty and Mutability. Tarragona: URV Publicacions.

Novas, Carlos. 2006. The Political Economy of Hope: Patients' Organizations, Science and Biovalue. BioSocieties 1(3): 289–305.

Oudshoorn, Nelly. 2011. Telecare: Technologies and the Transformation of Healthcare. New York: Palgrave Macmillan.

Petryna, Adriana, Andrew Lakoff, and Arthur Kleinman, eds. 2006. Global Pharmaceuticals: Ethics, Markets, Practices. Durham: Duke University Press.

Rose, Nikolas. 2007. Politics of Life Itself: Biomedicine, Power and Subjectivity in the Twenty-First Century. Princeton, N.J.; Oxford: Princeton Univ. Press.

Ruckenstein, Minna, and Natasha Dow Schüll. 2017. The Datafication of Health. Annual Review of Anthropology 46(1): 261–278.

Singer, Merrill, Eleanor Shoreman-Ouimet, and Ashley Graham. 2022. Climate Change and Health. *In* A Companion to Medical Anthropology, Second Edition. Second edition. Merrill Singer, Pamela I. Erickson, and César Abadía-Barrero, eds. Pp. 429–441. Hoboken, NJ: Wiley Blackwell.

Smajdor, Anna, and Andrea Stöckl. 2018. PMDs and the Moral Specialness of Medicine: An Analysis of the "Keepsake Ultrasound". *In* Quantified Lives and Vital Data. Rebecca Lynch and Conor Farrington, eds. Pp. 155–178. London: Palgrave Macmillan.

Stöckl, Andrea. 2010. Public Discourses and Policymaking: The HPV Vaccination from the European Perspective. *In* Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine's Simple Solutions. Keith Wailoo, Julie Livingston, Steven Epstein, and Robert Aronowitz, eds. Pp. 254–269. Baltimore: Johns Hopkins University Press.

Street, Alice. 2014. Biomedicine in an Unstable Place: Infrastructure and Personhood in a Papua New Guinean Hospital. Durham: Duke University Press.

Sunder Rajan, Kaushik. 2006. Biocapital: The Constitution of Postgenomic Life. Durham: Duke University Press.

2007. Experimental Values: Indian Clinical Trials and Surplus Health. New Left Review 45(2007): 67–88.

Taussig, Karen-Sue, Klaus Hoeyer, and Stefan Helmreich. 2013. The Anthropology of Potentiality in Biomedicine: An Introduction to Supplement 7. Current Anthropology 54(S7): S3–S14.

Van Dongen, Els. 1998. 'I Wish a Happy End': Hope in the Lives of Chronic Schizophrenic Patients. Anthropology & Medicine 5(2): 169–192.

Wailoo, Keith, Julie Livingston, Steven Epstein, and Robert Aronowitz, eds. 2010. Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine's Simple Solutions. Baltimore: Johns Hopkins University Press.

Waldby, Catherine, and Robert Mitchell. 2006. Tissue Economies: Blood, Organs, and Cell Lines in Late Capitalism. Durham: Duke University Press.

Whyte, Susan Reynolds. 1997. Questioning Misfortune: The Pragmatics of Uncertainty in Eastern Uganda. Cambridge: Cambridge University Press.