

Rethinking Greenland And The Arctic In The Era Of Climate Change New Northern Horizons The Earthscan Science In Society Series

Education in science, technology, engineering and mathematics (STEM) is crucial for taking advantage of the prospects of new scientific discoveries initiating or promoting technological changes, and managing opportunities and risks associated with innovations. This book explores the emerging perspectives and methodologies of STEM education and its relationship to the cultural understanding of science and technology in an international context. The authors provide a unique perspective on the subject, presenting materials and experiences from non-European industrialized as well as industrializing countries, including China, Japan, South Korea, India, Egypt, Brazil and the USA. The chapters offer a wide scope of interpretations and comparative reviews of STEM education by including narrative elements about cultural developments, considering the influence of culture and social perceptions on technological and social change, and applying innovative tools of qualitative social research. The book represents a comprehensive and multidisciplinary review of the current status and future challenges facing STEM education across the world, including issues such as globalization, interdependencies of norms and values, effects on equity and social justice as well as resilience. Overall the volume provides valuable insights for a broad and comprehensive international comparison of STEM philosophies, approaches and experiences.

Climate change is affecting the Arctic environment and ecosystems at an accelerating speed, twice the rate of the global average. This is opening the Arctic to transportation and resource development and creating serious challenges for local communities and indigenous peoples. Climate Governance in the Arctic considers two aspects of climate change from an institutional perspective. It focuses on how relevant regimes, institutions and governance systems support mitigation of climate change. It also examines the extent to which the varying governance arrangements in the Arctic support adaptation and the development of adaptation processes for the region. The book's focus on Arctic governance offers unique insights within climate change mitigation and adaptation research.

A riveting, urgent account of the explorers and scientists racing to understand the rapidly melting ice sheet in Greenland, a dramatic harbinger of climate change "Jon Gertner takes readers to spots few journalists or even explorers have visited. The result is a gripping and important book."--Elizabeth Kolbert, Pulitzer Prize-winning author of *The Sixth Extinction NAMED ONE OF THE BEST BOOKS OF THE YEAR BY* The Washington Post * The Christian Science Monitor * Library Journal Greenland: a remote, mysterious island five times the size of California but with a population of just 56,000. The ice sheet that covers it is 700 miles wide and 1,500 miles long, and is composed of nearly three quadrillion tons of ice. For the last 150 years, explorers and scientists have sought to understand Greenland--at first hoping that it would serve as a gateway to the North Pole, and later coming to realize that it contained essential information about our climate. Locked within this vast and frozen white desert are some of the most profound secrets about our planet and its future. Greenland's ice doesn't just tell us where we've been. More urgently, it tells us where we're headed. In *The Ice at the End of the World*, Jon Gertner explains how Greenland has evolved from one of earth's last frontiers to its largest scientific laboratory. The history of Greenland's ice begins with the explorers who arrived here at the turn of the twentieth century--first on foot, then on skis, then on crude, motorized sleds--and embarked on grueling expeditions that took as long as a year and often ended in frostbitten tragedy. Their original goal was simple: to conquer Greenland's seemingly infinite interior. Yet their efforts eventually gave way to scientists who built lonely encampments out on the ice and began drilling--one mile, two miles down. Their aim was to pull up ice cores that could reveal the deepest mysteries of earth's past, going back hundreds of thousands of years. Today, scientists from all over the world are deploying every technological tool available to uncover the secrets of this frozen island before it's too late. As Greenland's ice melts and runs off into the sea, it not only threatens to affect hundreds of millions of people who live in coastal areas. It will also have drastic effects on ocean currents, weather systems, economies, and migration patterns. Gertner chronicles the unfathomable hardships, amazing discoveries, and scientific achievements of the Arctic's explorers and researchers with a transporting, deeply intelligent style--and a keen sense of what this work means for the rest of us. The melting ice sheet in Greenland is, in a way, an analog for time. It contains the past. It reflects the present. It can also tell us how much time we might have left.

This book explores structural changes in Greenland's economy and labour markets due to the transformative effects of climatic changes and growing international attention. It offers multidisciplinary perspectives from economists, sociologists, and political scientists to demonstrate how the Greenlandic economy works. Due to an increasing focus on the Arctic area and Greenland in particular, the book seeks to understand the functioning and dynamics of Greenland's labour economy, as well as the challenges that arise from the melting ice and internationalisation. It fills a substantive gap in the existing literature by compiling research on these critical subjects and exploring current and future opportunities for labourers. Today, Greenland is reliant on large financial subsidies from Denmark to provide for a large share of its national budget. This fuels Greenland's political ambition to gain greater independence from Denmark, which requires more private sector growth to develop a sustainable economy. This book thus contains an exhaustive introduction to important business development themes such as macroeconomics, markets, labour supply, labour market policies, and institutions and considers Greenland's colonial past, great Inuit heritage, and unique geography and nature to re-shape its economy and labour markets. Informed by a lucid writing style, each chapter casts light on different economic and social issues of Greenland. This is the first international book on Greenland's economy which discusses its geopolitical importance and prospects for the Arctic region. It will be a valuable point of reference for students and academics of economics, Arctic research and political economy.

Less tangible than melting polar glaciers or the changing social conditions in northern societies, the modern Arctic represented in writings, visual images and films has to a large extent been neglected in scholarship and policy-making. However, the modern Arctic is a not only a natural environment dramatically impacted by human activities. It is also an incongruous amalgamation of exoticized indigenous tradition and a mundane everyday. The chapters in this volume examine the modern Arctic from all these perspectives. They demonstrate to what extent the processes of modernization have changed the discursive signification of the Arctic. They also investigate the extent to which the traditions of heroic Arctic images – whether these traditions

are affirmed, contested or repudiated – have continued to shape, influence and inform modern discourses. Sometimes the Arctic is seen as synonymous with modernity itself. Sometimes it appears as a utopian space signalling a different future. However, it still often represents the continued survival within modernity of the past as nostalgia, longing, dream and myth. Rather than a single national perspective, *The Fast-Changing Arctic* brings together circumpolar viewpoints from North America, Europe and Asia for an integrated discussion of strategic military, diplomatic, and security challenges in the high North. Thoughtful analyses are included of different regions, climate issues, institutions, and foreign and security policies."--pub. desc. *Climate Change and Writing the Canadian Arctic* explores the impact of climate change on Canadian literary culture. Analysis of the changing rhetoric surrounding the discovery of the lost ships of the Franklin expedition serves to highlight the political and economic interests that have historically motivated Canada's approach to the Arctic and shaped literary representations. A recent shift in Canadian writing away from national sovereignty to circumpolar stewardship is revealed in detailed close readings of Kathleen Winter's *Boundless* and Sheila Watt-Cloutier's *The Right to Be Cold*.

In a period of rapid climate change and climate governance failures, it is crucial to understand and address how effectively different political institutions can and should react to climate change. The term 'institutional response capacity' can be defined as a measurement for how effective political institutions may respond to threats and challenges such as climate change. This book sets out to provide a venue for the discussion of how to conduct climate politics by offering new perspectives on how social and political institutions are capable of responding to climate change. In doing so, the book explores how democracy, institutional design and polycentric governance influence social and political entities' capacity to mitigate, adapt, address and transform climate change. The book offers building blocks for a new agenda of climate studies by focusing on institutional response capacity and by offering a new approach to climate governance at a time when many political initiatives have failed. This interdisciplinary volume is a valuable resource for academics, researchers and policy-makers in the areas of anthropology, political science, geography and environmental studies.

Voters expect their elected representatives to pursue good policy and presume this will be securely founded on the best available knowledge. Yet when representatives emphasize their reliance on expert knowledge, they seem to defer to people whose authority derives, not politically from the sovereign people, but from the presumed objective status of their disciplinary bases. This book examines the tensions between political authority and expert authority in the formation of public policy in liberal democracies. It aims to illustrate and better understand the nature of these tensions rather than to argue specific ways of resolving them. The various chapters explore the complexity of interaction between the two forms of authority in different policy domains in order to identify both common elements and differences. The policy domains covered include: climate geoengineering discourses; environmental health; biotechnology; nuclear power; whaling; economic management; and the use of force. This volume will appeal to researchers and to convenors of post-graduate courses in the fields of policy studies, foreign policy decision-making, political science, environmental studies, democratic system studies, and science policy studies.

This comprehensive text explains the relationship between the Arctic and the wider world through the lenses of international relations, international law, and political economy. It is an essential resource for any student or scholar seeking a clear and succinct account of a region of ever-growing international importance.

Once imagined as a place on the very edge of the world, Greenland is now viewed as being at the epicentre of climate change. At the same time, international attention is focused on opportunities for oil and mineral development, seemingly made possible as the inland ice melts and sea ice disappears, revealing geological riches and making access to remote areas easier. In this book, Mark Nuttall takes the reader on a journey through landscapes, seascapes and icescapes of memory, movement and anticipation. Unravelling the entanglements of climate change, indigenous sovereignty and the politics surrounding non-renewable resource extraction, he describes how the country is on the verge of major environmental, political and social transformations as it aspires to greater autonomy and possible independence from Denmark. At the heart of this is discussion about how resources and the environment are given meaning and how they have become subject to intense political and ideological struggle. *Climate, Society and Subsurface Politics in Greenland: Under the Great Ice* is a key resource for academics, practitioners and students of anthropology, geography, development studies, political ecology and polar studies.

Cities and the Knowledge Economy is an in-depth, interdisciplinary, international and comparative examination of the relationship between knowledge and urban development in the contemporary era. Through the lenses of promise, politics and possibility, it examines how the knowledge economy has arisen, how different cities have sought to realise its potential, how universities play a role in its realisation and, overall, what this reveals about the relationship between politics, capitalism, space, place and knowledge in cities. The book argues that the 21st century city has been predicated on particular circuits of knowledge that constitute expertise as residing in elite and professional epistemic communities. In contrast, alternative conceptions of the knowledge society are founded on assumptions which take analysis, deliberation, democracy and the role of the citizen and communities of practice seriously. Drawing on a range of examples from cities around the world, the book reflects on these possibilities and asks what roles the practice of 'active intermediation', the university and a critical and engaged social scientific practice can all play in this process. The book is aimed at researchers and students from different disciplines – geography, politics, sociology, business studies, economics and planning – with interests in contemporary urbanism and the role of knowledge in understanding development, as well as urban policymakers, politicians and practitioners who are concerned with the future of our cities and seek to create coalitions of different communities oriented towards more just and sustainable futures.

The days of rationalist scientific management and deference to official data are behind us. The credibility of experts and the information they provide are regularly challenged; officials are routinely provided with conflicting sets of facts as they plan and make decisions; and decision makers and stakeholders alike are largely skeptical that technical information will adequately account for the various interests and concerns and lead to the right outcomes. They struggle to reconcile technical information with other forms of knowledge, and differing interests, priorities and perspectives. Issues like climate change are complicating matters even further, as scientists and technicians must increasingly acknowledge the uncertainty and potential fallibility of their findings, and highlight the dynamic nature of the systems they are explaining. This book examines how groups looking to plan and make decisions in any number of areas can wade through the imperfect and often contradictory information they have to make fair, efficient, wise and well-informed choices. It introduces an emerging and very promising approach called joint fact-

finding (JFF). Rather than each stakeholder group marshaling the set of facts that best advance their respective interests and perspectives while discrediting the contradictory facts others provide, groups are challenged to collaboratively generate shared sets of facts that all parties accept. This book introduces readers to the theory of JFF, the value it can provide, and how they can adopt this approach in practice. It brings together writings from leading practitioners and scholars from around the world that are at the forefront of the JFF approach to science intensive policymaking, urban planning, and environmental dispute resolution. The first set of chapters outlines the concept of JFF, and situates it within other bodies of theory and practice. The second set of case-based chapters elucidates how JFF is being applied in practice. This book delivers a new perspective to scholars in the field of public policy, urban planning, environmental studies, and science and technology studies, as well as public officials, technical experts, policy consultants, and professional facilitators.

Human and Societal Security in the Circumpolar Arctic addresses the comprehensive understanding of security in the Arctic, and specific challenges of the Arctic population from the viewpoint of human security.

Climate change and globalisation are opening up the Arctic for exploitation by the world – or so we are told. But what about the views, interests and needs of the peoples who live in the region? This volume explores the opportunities and limitations in engaging with the Arctic under change, and the Arctic peoples experiencing the changes, socially and physically. With essays by both academics and Arctic peoples, integrating multiple perspectives and multiple disciplines, the book covers social, legal, political, geographical, scientific and creative questions related to Arcticness, to address the challenges faced by the Arctic as a region and specifically by local communities. As well as academic essays, the contributions to the book include personal reflections, a graphic Topics covered in the essays include indigenous identity and livelihoods such as reindeer herding, and adapting to modern identities; a graphic essay on the experience of Arctic indigenous peoples in residential schools; the effects of climate change; energy in the Arctic; and extractive industries and their impacts on local communities.essay, and poetry, to ensure wide and varied coverage of the Arctic experience – what the contributions all have in common is the fundamental human perspective. The book includes reflections on the future of Arcticness, engaging with communities to ensure meaningful representation and as a counterpoint to the primacy of environmental, national and global issues.

Greenland is becoming a critically important territory in terms of tourism, climate change and competition for resource access, yet it has been poorly represented in academic literature. Tourism now features as a major source of income for the territory alongside fisheries. Cruise tourism is increasing rapidly, and might superficially appear to be best suited to Greenlandic conditions, given the lack of large-scale accommodation infrastructure and almost non-existent land routes between settlements. Ironically, one of the most spectacular tourist attractions is the large number of icebergs that are being calved as the result of glacier retreat and ice cap melting, both appearing to be taking place at ever increasing rates. As a consequence of ice removal, the territory's claimed extensive range of mineral resources, not least rare earth elements and hydrocarbons, are becoming more accessible for exploitation and, thereby, are acting increasingly as the focus for geopolitical competition. This book explores the nature of dynamics between tourism, climate change and the geopolitics of natural resource exploitation in the Arctic and examines their interrelationships specifically in the critical context of Greenland, but within a framework that emphasises the wider global implications of the outcomes of such interrelationships.

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The World Multiple, as a collection, is an ambitious ethnographic experiment in understanding how the world is experienced and generated in multiple ways through people's everyday practices. Against the dominant assumption that the world is a single universal reality that can only be known by modern expert science, this book argues that worlds are worlded—they are socially and materially crafted in multiple forms in everyday practices involving humans, landscapes, animals, plants, fungi, rocks, and other beings. These practices do not converge to a singular knowledge of the world, but generate a world multiple—a world that is more than one integrated whole, yet less than many fragmented parts. The book brings together authors from Europe, Japan, and North America, in conversation with ethnographic material from Africa, the Americas, and Asia, in order to explore the possibilities of the world multiple to reveal new ways to intervene in the legacies of colonialism, imperialism, and capitalism that inflict damage on humans and nonhumans. The contributors show how the world is formed through interactions among techno-scientific, vernacular, local, and indigenous practices, and examine the new forms of politics that emerge out of them. Engaged with recent anthropological discussions of ontologies, the Anthropocene, and multi-species ethnography, the book addresses the multidimensional realities of people's lives and the quotidian politics they entail.

This book contributes to broadening the interdisciplinary knowledge basis for the description, analysis and assessment of land use practices. It presents conceptual advances grounded in empirical case studies on four main themes: distal drivers, competing demands on different scales, changing food regimes and land-water competition. Competition over land ownership and use is one of the key contexts in which the effects of global change on social-ecological systems unfold. As such, understanding these rapidly changing dynamics is one of the most pressing challenges of global change research in the 21st century. This book contributes to a deeper understanding of the manifold interactions between land systems, the economics of resource production, distribution and use, as well as the logics of local livelihoods and cultural contexts. It addresses a broad readership in the geosciences, land and environmental sciences, offering them an essential reference guide to land use competition.

This book explores how the Danish authorities governed the colonized population in Greenland in the nineteenth and twentieth centuries. Two competing narratives of colonialism dominate in Greenland as well as Denmark. One narrative portrays the Danish colonial project as ruthless and brutal extraction of a vulnerable indigenousness people; the other narrative emphasizes almost exclusively the benevolent aspects of Danish rule in Greenland. Rather than siding with one of these narratives, this book investigates actual practices of colonial governance in Greenland with an outlook to the extensive international scholarship on colonialism and post-colonialism. The chapters address the intimate connections between the establishment of an ethnographic discourse and the colonial techniques of governance in Greenland. Thereby the book provides important nuances to the understanding of the historical relationship between Denmark and Greenland and links this historical trajectory to the present negotiations of Greenlandic identity.

This book investigates the multifaceted nature of change in today's Nordic Arctic and the necessary research and policy development required to address the challenges and opportunities currently faced by this region. It focuses its attention on the recent efforts of the Nordic community to create specialized Centers of Excellence in Arctic Research in order to facilitate this process of scientific inquiry and policy articulation. The volume seeks to describe both the steps that lead to this decision and the manner in which this undertaking as evolved. The work highlights the research efforts of the four Centers and their investigations of a variety of issues including those related to ecosystem and wildlife management, the revitalization resource dependent communities, the emergence of new climate-born diseases and the

development of adequate modeling techniques to assist northern communities in their efforts at adaptation and resilience building. Major discoveries and insights arising from these and other efforts are detailed and possible policy implications considered. The book also focuses attention on the challenges of creating and supporting multidisciplinary teams of researchers to investigate such concerns and the methods and means for facilitating their collaboration and the integration of their findings to form new and useful perspectives on the nature of change in the contemporary Arctic. It also provides helpful consideration and examples of how local and indigenous communities can be engaged in the co-production of knowledge regarding the region. The volume discusses how such research findings can be best communicated and shared between scientists, policymakers and northern residents. It considers the challenges of building common concern not just among different research disciplines but also between bureaucracies and the public. Only when this bridge-building effort is undertaken can true pathways to action be established. .

A growing problem of interest in the field of science and technology policy is that the next generation of innovations is arriving at an accelerating rate, and the governance system is struggling to catch up. Current approaches and institutions for effective technology assessment are ill suited and poorly designed to proactively address the multidimensional, interconnected societal impacts of science and technology advancements that are already taking place and expected to continue over the course of the 21st century. This book offers tangible insights into the strategies deployed by well-known, high-profile organizations involved in anticipating the various societal and policy implications of nanotechnology and synthetic biology. It focuses predominantly on an examination of the practices adopted by the often-cited and uniquely positioned Project on Emerging Nanotechnologies in the United States, as well as being informed by comparisons with a range of institutions also interested in embedding forward-looking perspectives in their respective area of innovation. The book lays out one of the first actionable roadmaps that other interested stakeholders can follow when working toward institutionalizing anticipatory governance practices throughout the policymaking process.

This book intends to inform the key participants in extractive projects – namely, the communities, the host governments and the investors – about good practice for effective community engagement, based on analysis of international standards and expectations, lessons from selected case-studies and innovations in public participation. The extent of extractive industries varies widely around the Arctic as do governmental and social attitudes towards resource development. Whilst most Arctic communities are united in seeking investment to fund education, healthcare, housing, transport and other essential services, as well as wanting to benefit from improved employment and business opportunities, they have different views as to the role that extractive industries should play in this. Within each community, there are multiple perspectives and the goal of public participation is to draw out these perspectives and seek consensus. Part I of the book analyses the international standards that have emerged in recent years regarding public participation, in particular, in respect of indigenous peoples. Part II presents six case studies that aim to identify both good and bad practices and to reflect upon the distinct conditions, needs, expectations, strategies and results for each community examined. Part III explores the importance of meaningful participation from a corporate perspective and identifies some common themes that require consideration if Arctic voices are to shape extractive industries in Arctic communities. In drawing together international law and standards, case studies and examples of good practice, this anthology is a timely and invaluable resource for academics, legal advisors and those working in resource development and public policy.

This ground-breaking book investigates how Arctic indigenous communities deal with the challenges of climate change and how they strive to develop self-determination. Adopting an anthropological focus on Greenland's vision to boost extractive industries and transform society, the book examines how indigenous communities engage with climate change and development discourses. It applies a critical and comparative approach, integrating both local perspectives and adaptation research from Canada and Greenland to make the case for recasting the way the Arctic and Inuit are approached conceptually and politically. The emphasis on indigenous peoples as future-makers and right-holders paves the way for a new understanding of the concept of indigenous knowledge and a more sensitive appreciation of predicaments and dynamics in the Arctic. This book will be of interest to post-graduate students and researchers in environmental studies, development studies and area studies.

Greenland and the International Politics of a Changing Arctic examines the international politics of semi-independent Greenland in a changing and increasingly globalised Arctic. Without sovereign statehood, but with increased geopolitical importance, independent foreign policy ambitions, and a solidified self-image as a trailblazer for Arctic indigenous peoples' rights, Greenland is making its mark on the Arctic and is in turn affected – and empowered – by Arctic developments. The chapters in this collection analyse how a distinct Greenlandic foreign policy identity shapes political ends and means, how relations to its parent state of Denmark is both a burden and a resource, and how Greenlandic actors use and influence regional institutional settings as well as foreign states and commercial actors to produce an increasingly independent – if not sovereign – entity with aims and ambitions for regional change in the Arctic. This is the first comprehensive and interdisciplinary examination of Greenland's international relations and how they are connected to wider Arctic politics. It will be essential reading for students and scholars interested in Arctic governance and security, international relations, sovereignty, geopolitics, paradiplomacy, indigenous affairs and anyone concerned with the political future of the Arctic.

This book addresses the growing demand for collaborative and reflexive scholarly engagement in the Arctic directed at providing relevant insights to tackle local challenges of arctic communities. It examines how arctic research can come to matter in new ways by combining methods and engagement in the field of inquiry in new and meaningful ways. Research informs decisions affecting the futures of arctic communities. Due to its ability to include local concerns and practices, collaborative research could play a greater role in this process. By way of example of how to bring new voices to the fore in research, this edited collection presents experiences of researchers active in collaborative arctic research. It draws multidisciplinary perspectives from a broad range of academics in the fields such as law and medicine over tourism and business studies, planning and development, cultural studies, ethnology and anthropology. It also shares personal experiences of working in Greenland and with Greenlanders, whether communities, businesses and entrepreneurs, public officials and planners, patients or students. Offering useful insights into the current problems of Greenland representative of the arctic region, this book will be beneficial for researchers and scientists involved in arctic research.

This book focuses on the understudied social and cultural dimensions of sustainability in the Arctic. More specifically, it explores these thematics through paying attention to resources in different definitions and forms and the ways in which they entangle in the realities and expectations of social and cultural sustainability in the region. The book approaches resources as socially and culturally constructed and also draws attention to social, human and cultural capabilities and the roles they have in making and shaping the imaginaries of sustainability. Together, this volume and its case studies contribute to a broadened understanding of the interplay of natural and material resources and social and cultural capabilities as well as their discursive framings. This multidisciplinary text includes contributions from political sciences, sociology, gender studies, regional studies, economics and art research. With its wide range of conceptually

informed case studies, the book is relevant for researchers and professionals as well as advanced students and for institutions and organizations offering education in Arctic affairs. This book examines what sovereignty and security mean in an Arctic region that is changing rapidly due to the intersection of globalization, climate change, and geopolitical competition. Conversations defining the Arctic region often provoke debate and controversy -- for scientists, this lies in the imprecise and imaginary line known as the Arctic Circle; for countries like Canada, Russia, the United States, and Denmark, such discussions are based in competition for land and resources; for indigenous communities, those discussions are also rooted in issues of rights. These shifting lines are only made murkier by the threat of global climate change. In the Arctic Ocean, the consequences of Earth's warming trend are most immediately observable in the multi-year and perennial ice that has begun to melt, which threatens ice-dependent microorganisms and, eventually, will disrupt all of Arctic life and raise sea levels globally. In *The Arctic: What Everyone Needs to Know*®, Klaus Dodds and Mark Nuttall offer concise answers to the myriad questions that arise when looking at the circumpolar North. They focus on its peoples, politics, environment, resource development, and conservation to provide critical information about how changes there can, and will, affect our entire globe and all of its inhabitants. Dodds and Nuttall explore how the Arctic's importance has grown over time, the region's role during the Cold War, indigenous communities and their history, and the past and future of the Arctic's governance, among other crucial topics.

Even by the scientists most closely associated with it, geoengineering – the deliberate intervention in the climate at global scale to mitigate the effects of climate change – is perceived to be risky. For all its potential benefits, there are robust differences of opinion over the wisdom of such an intervention. *Systems Thinking for Geoengineering Policy* is the first book to theorise geoengineering in terms of complex adaptive systems theory and to argue for the theoretical imperative of adaptive management as the default methodology for an effective low risk means of confronting the inescapable uncertainty and surprise that characterise potential climate futures. The book illustrates how a shift from the conventional Enlightenment paradigm of linear reductionist thinking, in favour of systems thinking, would promote policies that are robust against the widest range of plausible futures rather than optimal only for the most likely, and also unlock the policy paralysis caused by making long term predictions of policy outcomes a prior condition for policy formulation. It also offers some systems driven reflections on a global governance network for geoengineering. This book is a valuable resource for all those with an interest in climate change policy, geoengineering, and CAS theory, including academics, under- and postgraduate students and policymakers.

Contributors to this volume discuss different types of emergencies and conflicts and how challenging these multilingual operational environments are for linguists. The growth in reach and number of international relief operations has exposed the limits of current research into these challenges. Evidence in disaster management studies suggests communication remains a major operational issue. This book calls for enhanced focus on the role of translators and interpreters in emergencies by discussing existing research and questions which have emerged from experience in the field. Contributions in this volume undeniably demonstrate the need for multidisciplinary studies in mediating multilingual emergencies. They consider emergencies in hospitals (Cox and Lázaro Gutiérrez), in disaster response (Dogan), in bespoke training to translators in fast-developing crises (O'Brien), and in planning responses in predictably dangerous habitats (Razumovskaya & Bartashova). The volume also illustrates scenarios in which discourse on language mediation shows bias by limiting political dialogues (Al Shehari), by conditioning news reporting (Skorokhod), and by enforcing stereotypical notions of linguists in wars (Gaunt).

Encyclopedia of the Anthropocene presents a currency-based, global synthesis cataloguing the impact of humanity's global ecological footprint. Covering a multitude of aspects related to Climate Change, Biodiversity, Contaminants, Geological, Energy and Ethics, leading scientists provide foundational essays that enable researchers to define and scrutinize information, ideas, relationships, meanings and ideas within the Anthropocene concept. Questions widely debated among scientists, humanists, conservationists, politicians and others are included, providing discussion on when the Anthropocene began, what to call it, whether it should be considered an official geological epoch, whether it can be contained in time, and how it will affect future generations. Although the idea that humanity has driven the planet into a new geological epoch has been around since the dawn of the 20th century, the term 'Anthropocene' was only first used by ecologist Eugene Stoermer in the 1980s, and hence popularized in its current meaning by atmospheric chemist Paul Crutzen in 2000. Presents comprehensive and systematic coverage of topics related to the Anthropocene, with a focus on the Geosciences and Environmental science Includes point-counterpoint articles debating key aspects of the Anthropocene, giving users an even-handed navigation of this complex area Provides historic, seminal papers and essays from leading scientists and philosophers who demonstrate changes in the Anthropocene concept over time

Climate change has long been a contentious issue, even before its official acknowledgment as a global threat in 1979. Government policies have varied widely, from Barack Obama's dedication to environmentalism to George W. Bush's tacit minimizing of the problem to Republican officials' refusal to acknowledge the scientific evidence supporting anthropogenic climate change. Presented chronologically, this collection of important policy-shaping documents shows how the views of both advocates and deniers of climate change have developed over the past four decades.

This edited volume examines the multiple dimensions of sustainability in the Circumpolar North, a territory facing unprecedented environmental and social challenges at the start of the 21st century. The chapters explore the cultural, economic, political and environmental aspects of sustainability, as well as examples of successful research collaboration with northern and indigenous communities. By examining a wide range of issues and places, the contributions highlight the diversity of the Circumpolar North, the challenges and opportunities it faces, and the ways in which people and communities are adapting to and influencing the changing circumstances of this dynamic region. Contributors include both Indigenous and non-Indigenous researchers from eleven different countries and from across the career spectrum. This book will appeal to an academic audience interested in the manifold facets of sustainability in the Arctic and sub-arctic regions of the world.

Global energy problems will remain a challenge in the coming decades. The impact of climate change and the melting of polar sea ice opening up access to offshore hydrocarbon

resources in the Arctic Ocean, raises questions for both civil society and the scientific community over drilling opportunities in Arctic marine areas. Disparities in approach to the governance of oil and gas extraction in the Arctic arise from fundamental differences in histories, cultures, domestic constraints and substantive values and attitudes in the Arctic coastal states and sub-states. Differing political systems, legal traditions and societal beliefs with regard to energy security and economic development, environmental protection, legitimacy of decision making, and the ownership and respect of the rights of indigenous people, all affect how governance systems of oil and gas extraction are designed. Using a multidisciplinary approach and case studies from the USA, Norway, Russia, Canada, Greenland/Denmark and the EU, this book both examines the current governance of extraction and its effects and considers ways to enhance the efficiency of environmental management and public participation in this system.

This book offers a fresh analysis of constitutional, economic, demographic and cultural developments in the overseas territories of Britain, France, the Netherlands, Denmark, Spain, the United States, Australia and New Zealand. Ranging from Greenland to Gibraltar, the Falklands to the Faroes, and encompassing islands in the Atlantic, Pacific and Indian Oceans, and the Caribbean, these territories command attention because of their unique status, and for the ways that they occasionally become flashpoints for rival international claims, dubious financial activities, illegal migration and clashes between metropolitan and local mores. Connell and Aldrich argue that a negotiated dependency brings greater benefits to these territories than might independence.

The Politics of Sustainability in the Arctic argues that sustainability is a political concept because it defines and shapes competing visions of the future. In current Arctic affairs, prominent stakeholders agree that development needs to be sustainable, but there is no agreement over what it is that needs to be sustained. In original conservationist discourse, the environment was the sole referent object of sustainability; however, as sustainability discourses have expanded, the concept has been linked to an increasing number of referent objects, such as society, economy, culture, and identity. This book sets out a theoretical framework for understanding and analysing sustainability as a political concept, and provides a comprehensive empirical investigation of Arctic sustainability discourses. Presenting a range of case studies from Greenland, Norway, Canada, Russia, Iceland, and Alaska, the chapters in this volume analyse the concept of sustainability and how actors are employing and contesting this concept in specific regions within the Arctic. In doing so, the book demonstrates how sustainability is being given new meanings in the postcolonial Arctic and what the political implications are for postcoloniality, nature, and development more broadly. Beyond those interested in the Arctic, this book will also be of great value to students and scholars of sustainability, sustainable development, and identity and environmental politics.

Arctic cinemas represent a noteworthy new subfield of film studies, and in the current era of unprecedented global warming, interest in the Arctic region and its cinematic portrayals has never been greater. Individually and collectively, films pertaining to Arctic inhabitants and experiences have substantially influenced viewer perceptions of the region throughout the world, often serving as blank slates for the fantasies and projections of individuals elsewhere with regard to its challenging landscape and perceived "otherworldliness." Written by a blend of academic scholars, artists, and filmmakers, this collection of essays provides a transnational overview of the variety of works--ranging from art films and documentaries to horror and road movies--that fall under the conceptual rubric of "Arctic cinemas," and examines their contributions to past and present perceptions of the Arctic. Theoretical and analytical approaches represented here include critical theory, cultural studies, ecocriticism, ethnography, gender studies, genre theory, historiography, and indigenous studies.

How can we think of art history as a discipline that moves process-based, performative, and cultural migratory movement to the center of its theoretical and methodical analyses? With contributions from internationally renowned experts, this manual, for the first time, provides answers as to what consequences the interaction of migration and globalization has on research in the field of the science of art, on curatory practice, and on artistic production and theory. The objective of this multi-vocal anthology is to open up an interdisciplinary discourse surrounding the increased focus on the phenomenon of migration in art history.

Focused on the "Belt and Road Initiative", this book discusses China's opportunities to translate economic leverage into political outcomes. The central question is how China's expanding economic influence will transform the Eurasian political landscape. Proposed in late 2013 by President Xi Jinping, the Belt and Road is the most ambitious foreign policy approach adopted thus far and represents the culmination of China's search for a grand strategic narrative. Comparative methods and diverse conceptual frameworks are applied to contextualize and explore the political, economic, and cultural ramifications of the Belt and Road in order to shed light on its transformative significance, risks and opportunities.

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