Table of contents

1. AN ECONOMIC THEORY OF TECHNOLOGICAL CHANGE: THE CASE OF PATENTS AND UNITED STATES RAILROADS 1871-1950

2. 'Read thyself': Science and self-knowledge in Hobbes' "Leviathan"

3. Historical themes in early standardized writing assessment, 1912-1925


5. Telling the stars: A quantitative approach to assessing the use of folk tales in science education

6. Employment sectors as opportunity structures: The effects of location on male and female scientific dissemination

7. The size of the risk: An environmental history of the nuclear Great Basin
8. Reflections on electricity, modernization, & identity in the New South

9. Explaining and understanding

10. Rethinking machines: Artificial intelligence beyond the philosophy of mind

11. A model citizen: Ethos, conservation, and the rhetorical construction of Aldo Leopold

12. Causation in a physical world

13. The Meanings and Values of Race: Pluralism and Social Meliorism

14. Radioactive knowledge: State control of scientific information in post-Soviet Kazakhstan

15. The Ocean Laboratory: Exploration, Fieldwork, and Science at Sea
16. Illusionism: Making the problem of hallucinations disappear

17. The (Manufactured) Human in U.S. Science Fiction, 1938-1950

18. The predictive focus account of the principle of simplicity

19. The early modern debate on the problem of matter's divisibility: A Neo-Aristotelian solution

20. The spectral imagination: American art between science and superstition in the late nineteenth century

21. Using simulations in physics to teach Newton's third law to high school learners with limited English proficiency: A mixed methods study

22. Epistemological implications of representational pluralism

23. The pessimistic induction and the epistemic status of scientific theories
24. Science fairs before Sputnik: Adolescent scientific culture in contemporary America

25. Metaphors from quantum physics: Enhancing ecological L2 social networking in an intermediate Italian course

Document 1 of 25

AN ECONOMIC THEORY OF TECHNOLOGICAL CHANGE: THE CASE OF PATENTS AND UNITED STATES RAILROADS 1871-1950

Author: DICK, TREVOR JOHN ORME


Abstract: None available.

Links:
http://RT4RF9QN2Y.search.serialssolutions.com/?ctx_ver=Z3
Subject: Economic history
Abstract: The central question of this thesis concerns science and its relation to the possibility of self-knowledge. In his Leviathan Hobbes writes that Man creates the Commonwealth by an act of self-imitation, and that 'reading the self' is the key to essential political knowledge. I want to explore how, and to what extent, Hobbes believes such knowledge and imitation is possible. The first selection deals with the question of 'Natural Mind' and examines Hobbes's phenomenal and mechanical theory of sensation, imagination, and mental discourse. In the second section I
explore what is artificial about human mind and the central role of language in Hobbes's vision of human Reason and Science. The epistemological explanation offered by Hobbes brings out the question--is the 'self' discovered or is it invented? How this question is answered is critical to the very possibility of pursuing a science, as opposed to an art, of politics.

Links:

Subject: Political science; Philosophy

Classification: 0615: Political science; 0422: Philosophy

Identifier / keyword: Philosophy, religion and theology, Social sciences, Thomas Hobbes

Title: 'Read thyself': Science and self-knowledge in Hobbes' "Leviathan"

Pages: 196 p.

Number of pages: 196

Publication year: 1995

Degree date: 1995
Historical themes in early standardized writing assessment, 1912-1925

Author: Lavendel, Brian J
Abstract: Writing assessment is an issue of some contention within the composition community. Many composition teachers and researchers have raised serious questions about current writing assessment practices. These educators are concerned that writing assessments are not consistent with composition theory and pedagogy. Additionally, many writing assessments do not fully reflect the richness and complexity of written expression. This study examines the historical development of writing assessment during the period 1912-1925, a time during which standardized writing assessment gained widespread use in composition. Drawing from the historical literature, the study develops and traces several themes illustrative of these early assumptions. These themes (reliability and agreement; objectivity and standardization; scientism, or science as panacea; efficiency, or business meets education; and "mathematization" and quantification) are explicated and elaborated to offer one historical interpretation of the historical development of standardized writing assessment. Through the research presented here, the reader can take a retrospective look at the development of many of the controversial aspects present in writing assessment today. This analysis should enable us to better understand and evaluate these issues as we develop writing assessments more consistent with contemporary
composition theory and pedagogy. The final chapter in this study presents examples of the recurrence of these themes and their influence on present day writing assessments.

Links:

Statistical characteristics and synoptic patterns of persistent positive temperature anomalies in the United States, 1950--1995

Author: Choi, Jongnam
Abstract: A statistical climatology of Persistent Positive Temperature Anomalies (PPTAs or "heatwaves") was developed using a new method of defining PPTAs. This measure is based on the statistical deviation of daily maximum temperatures from their true means for calendar dates. Persistence is defined as runs of X days with X deviation. This study demonstrates that the method is flexible and is useful for the calculation of PPTA normals. A high station density and long (1950-1995) period of record permits the creation of high quality maps of the U.S. frequency, intensity, duration, and area of impact of PPTAs. The method has the added advantage of permitting direct, uniform comparisons of PPTAs across all seasons and regions. The primary differences in long-lived PPTAs, i.e., those with long runs of consecutive, high deviation days, involve the season of occurrence: PPTAs in the central and eastern U.S. generally occur in the warm season, while western PPTAs occur in the cool season. Extreme summer PPTAs are centered in the Arkansas/Oklahoma region, while winter PPTAs are centered on the Nevada/Arizona region. The longest PPTA in the period of record (POR) occurred at Brownsville, TX (41 days) from 12 June 1980 to 22 July 1980; and one of the most intense PPTAs (>2.0 standard deviation) occurred at Pocahontas, AR for the period, July 6-17, 1980. Most (94%) of the record high temperatures which occurred in summer occurred within PPTAs, as did 91% of
record "Z" (high deviation) events, but, they are found in every season. An idealized synoptic pattern favorable for long-lived PPTAs was warm air-masses that were driven by southerly flows or formed by a stagnant, blocking upper-level ridge. A distinguishing feature of the 1954 summer PPTA is excessive daytime heat initiated by pre-existing widespread soil moisture deficits. An unusual warm-low typed thermal structure was sustained for this PPTA. The 1988 PPTA was more closely tied to upper-level forcing mechanisms than surface conditions. The peak of the 1988 summer PPTA occurred after the anticyclogenesis weakened. Synergistic warming effects of advected warm air and adiabatic heating result in significant winter PPTAs in the western U.S. Surface forcing mechanisms do not appear to be significant. Sudden increases of daily maximum temperature are primarily characterized by temporary, brief incursions of a largely northward-displaced polar jet streak. Accompanying intense quasi-geostrophic adiabatic subsidence heating and horizontal warm air advection play significant roles in inducing very intense PPTAs at the surface.

Links:
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Subject: Geography; Atmosphere

Classification: 0366: Geography; 0608: Atmosphere

Identifier / keyword: Social sciences, Pure sciences, Synoptic patterns, Persistent positive temperature anomalies, Heat wave, Climatology
Advisor: Meentemeyer, Vernon

University/institution: University of Georgia

University location: United States -- Georgia

Degree: Ph.D.

Source type: Dissertations & Theses

Language: English

Document type: Dissertation/Thesis

Dissertation/thesis number: 3025266

ProQuest document ID: 276221042

Document URL:
Telling the stars: A quantitative approach to assessing the use of folk tales in science education

Author: Meyers, Margaret B.

Abstract: This research examines the impact of paired folk tales and science explanations on students in third through sixth grades who viewed program modules from the SkyTeller Project of Lynn Moroney and the Lunar and Planetary Institute of Houston, Texas. The audience consisted of over 3500 students in eight locations in the United States. Because few quantitative studies have been
conducted to examine the use of stories in science education, the development of an instrument to assess students' attitudes toward science and stories forms a major part of this research. During the final stage of testing, the revised instrument and methods found significant increase in positive attitude toward science after the presentations. Questionnaires, telephone calls, and on-site visits with program presenters and teachers confirmed quantitative results. Despite the difficulties of conducting large-scale studies and the traditionally small response compliance, quantitative assessment can provide useful information for evaluating storytelling media.

Links:
Subject: Elementary education; Science education; Folklore

Classification: 0524: Elementary education; 0714: Science education; 0358: Folklore

Identifier / keyword: Social sciences, Education

Title: Telling the stars: A quantitative approach to assessing the use of folk tales in science education

Number of pages: 88
Employment sectors as opportunity structures: The effects of location on male and female scientific dissemination

Author: Whittington, Kjersten Bunker


Abstract: This project examines an understudied aspect of gender and scientific careers - the extent to which employment sectors act as opportunity structures for increasing or decreasing gender disparities in scientific dissemination. I capture productivity across sectors and work settings by focusing specifically on commercial science, using patenting activity as coinage for career productivity that spans academic and industrial contexts. Analyzing the structure of work settings across sectors provides new insight into the ways in which organizational context affects gender inequality in productivity. Using data from the NSF Survey of Doctorate Recipients and a comprehensive sample of life scientists, I examine how the structure of work organization influences gender disparities in patenting behavior. I show how scientists' individual characteristics interact with the arrangement of their work environment to produce noticeably different gender disparities across sectors and work settings. In particular, women with children appear to be the principally commercially disadvantaged group in the university setting.
However, there is no gender difference in involvement in certain industrial work settings--those characterized by flatter, more flexible organizational structures--than in hierarchically-arranged organizational settings such as academia and large, diversified industrial companies. I propose that differences in the social arrangements and reward incentives of academia and industry contribute to differences in gender disparities across sectors. Using networks built from inventor collaborations in biotechnology patents from 1976-2002, I explore how the relational structure between industrial and academic scientists embodies these sector-level differences. The structure of scientific collaboration closely follows the social incentives of work in the academy and industry. Investigations of scientists' locations in these two settings suggest that women in the academy are located in more peripheral and less central collaborative relationships than men in the academy. Furthermore, academic women benefit less from central positions than their counterpart women in other locations. The results suggest that commercialization may be a new arena for gender disparities in scientific productivity. However, a complex relationship between (1) organizational form, (2) the structure of sector-level rewards and incentives, and (3) collaborative relations is at work in bringing about differences in gender outcomes across sectors and work settings.

Links:
http://RT4RF9QN2Y.search.serialssolutions.com/?ctx_ver=Z3
The size of the risk: An environmental history of the nuclear Great Basin
Abstract: Throughout the twentieth century, Congress has managed the nation's public lands for the greater good of the country under a multiple-use construct. Land-use decisions based on serving the nation's public interest entailed federal land management agencies finding the utility of the land in order to put as much of it as possible into some kind of economic production and provide equitable access, as much as was feasible, to all the various public land users. But every federal program enacted on the nation's public lands has had an associated cost; not everyone or every environment has benefited from multiple-use public land programs. The problems associated with these programs include range degradation, radioactive fallout, a lack of protected natural places, and frustrated wild horse management. In considering public land programs across the Great Basin, an area predominately consisting of public domain, this study makes a holistic evaluation of these costs by setting each of the different public land programs across the region alongside each other to better understand their conflicting relationship. The "size of the risk," a term atomic scientist Enrico Fermi used to describe his estimation of the possible problems associated with a continental nuclear test site, is the sum of the collective
costs of all the public land programs throughout the twentieth century. Moving between the national and the local by capturing the voices of those residents and federal officials involved in the creation and implementation of public land programs, this work determines the cost of land-use conflicts, the size of which is the Great Basin's human and natural environment. The themes developed in this work include a closer examination of the multiple-use concept and its impact on the nation's public lands. Multiple-use theoretically promoted maximum efficient and equitable use of public land, but in actual practice, it created a contradictory hierarchical scale of use which privileged national interests over local development, economic value over existence value, profitability over sustainability, and maximization over sufficiency. Persistent efforts by public land users to maximize one or more aspects of their version of land use often required other users to minimize their land-use. Maximization created a pattern of public land management replicated throughout the American West that created conflict over the very purpose of nation's public lands. In one way or another, contention about the use of the Great Basin's lands arose out of people's perception of the region as a wasteland. This region, historically considered the nation's wasted land because it remained in the public domain, was populated by marginal cultural groups including Mormons, Basques, southern European immigrants, and Native Americans. For these groups, the wasteland was their homeland. The tension between those that lived in the Great Basin and used its public lands and those who were responsible for the management of those
lands created an insider-outsider, local-national dichotomy that further informed the region's development. Taken together, these concepts fuelled the land-use conflicts that informed the size of the risk.

Links:
Subject: American history; Land Use Planning; Modern history

Classification: 0337: American history; 0536: Land Use Planning; 0582: Modern history

Identifier / keyword: Social sciences, Atomic testing, Great Basin, Land use conflicts, Multiple use, Outdoor recreation, Public land, Ranching, Wild horses

Title: The size of the risk: An environmental history of the nuclear Great Basin

Number of pages: 607

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Place of publication: Ann Arbor

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ISBN: 9781124678443

Advisor: Wrobel, David M.

Committee member: Futrell, Robert; Hise, Greg; Kirk, Andrew; Nelson, Elizabeth

University/institution: University of Nevada, Las Vegas

Department: History

University location: United States -- Nevada

Degree: Ph.D.
Reflections on electricity, modernization, & identity in the New South

Author: Henderson, Matthew W.


Abstract: This thesis explores the relationship between the rhetoric of Southern reformers and the technology being adopted across South Carolina and Georgia at the end of the 19th century. The ideology of the New South, one that juxtaposed modern industry and old traditions, was fundamentally shortsighted in its failure to recognize how new technology would alter Southern institutions. Electric lights and power were widely viewed as neutral tools the South could employ to compete with Northern critics and achieve widespread hopes for modern prosperity. Because of this understanding of technology, one that is epitomized in the fanfare and optimism of the Chicago and Atlanta world's fairs, Southern reformers were sanguine about employing electricity in mills and towns throughout the South without consideration for the cultural costs. By examining the language of the participants (New South boosters and industrialists) we might understand how and why, in a region and period painted as being acutely concerned with preserving cultural institutions, the changes in Southern life that technology would bring went largely
unanticipated. To accomplish this, this study focuses primarily on the technological developments associated with the textile industry in the South Carolina upstate.

Links:
Subject: American history

Classification: 0337: American history

Identifier / keyword: Social sciences, Anderson, Electricity, Georgia, Mills, Modernization, New South, South Carolina, Textile

Title: Reflections on electricity, modernization, & identity in the New South

Number of pages: 104

Publication year: 2011

Degree date: 2011

School code: 0050
Explaining and understanding
Abstract: I argue for a new approach to the philosophy of explanation, one that treats explaining as an activity defined functionally by its propensity to produce understanding. Since this account is best articulated along with an account of understanding, I develop one. Specifically, I argue that understanding is best construed as a way of representing what is understood in a way that allows one to make efficacious inferences and successfully manipulate objects in the world. This pair of views stands in contrast with traditional views in the philosophy of science, which have been largely concerned with characterizing explanation in terms of some favored structure (e.g. deductive arguments) or content (e.g. reference to causes or mechanisms). I also explore the relationship between understanding and knowledge, arguing that understanding does not depend on justified belief. Finally, I address the recalcitrant mystery of explanatory asymmetry, arguing that later facts can sometimes explain earlier ones.
Advisor: Kraut, Robert; Shapiro, Stewart

Committee member: Smithies, Declan; Samuels, Richard

University/institution: The Ohio State University

Department: Philosophy

University location: United States -- Ohio

Degree: Ph.D.

Source type: Dissertations & Theses

Language: English

Document type: Dissertation/Thesis

Dissertation/thesis number: 3673722

ProQuest document ID: 1648415109
Rethinking machines: Artificial intelligence beyond the philosophy of mind

Author: Estrada, Daniel Jose

Abstract: Recent philosophy of mind has increasingly focused on the role of technology in shaping, influencing, and extending our mental faculties. Technology extends the
mind in two basic ways: through the creative design of artifacts and the purposive use of instruments. If the meaningful activity of technological artifacts were exhaustively described in these mind-dependent terms, then a philosophy of technology would depend entirely on our theory of mind. In this dissertation, I argue that a mind-dependent approach to technology is mistaken. Instead, some machines are best understood as independent participants in their own right, contributing to and augmenting a variety of social practices as active, though often unrecognized, community members. Beginning with Turing's call for "fair play for machines", I trace an argument concerning the social autonomy of nonhuman agents through the artificial intelligence debates of the 20th century. I'll argue that undue focus on the mind has obscured the force of Turing's proposal, leaving the debates in an unfortunate stalemate. I will then examine a network theoretic alternative to the study of multi-agent complex systems that can avoid anthropocentric, mind-dependent ways of framing human-machine interactions. I argue that this approach allows for both scientific and philosophical treatment of large and complicated sociotechnical systems, and suggests novel methods for designing, managing, and maintaining such systems. Rethinking machines in mind-independent terms will illuminate the nature, scope, and evolution of our social and technological practices, and will help clarify the relationships between minds, machines, and the environments we share.
Subject: Philosophy of Science; Philosophy; Artificial intelligence
Classification: 0402: Philosophy of Science; 0422: Philosophy; 0800: Artificial intelligence

Identifier / keyword: Philosophy, religion and theology, Applied sciences, Machine participation, Philosophy of technology, Turing, Alan, Philosophy of mind, Lovelace, Ada

Title: Rethinking machines: Artificial intelligence beyond the philosophy of mind

Number of pages: 148

Publication year: 2014

Degree date: 2014

School code: 0090

Source: DAI-A 76/06(E), Dec 2015

Place of publication: Ann Arbor

Country of publication: United States
A model citizen: Ethos, conservation, and the rhetorical construction of Aldo Leopold

Author: Cryer, Daniel A.
Abstract: This dissertation explores the changing, multifaceted ethos of Aldo Leopold (1887-1948), one of the twentieth century's most versatile environmental communicators. Drawing on scholarship in environmental rhetoric, rhetorical genre theory, citizenship theory and ecofeminism, I argue that throughout his career Leopold offered evolving rhetorical versions of himself as ideals of ecological behavior to be emulated by his readers. The chapters analyze Leopold's ethos as it was constructed in his early-career writings in the New Mexico Game Protective Association Pine Cone, a wildlife protection broadsheet; in the Report on a Game Survey of the North Central States, his first book; in reports and articles he wrote during the Wisconsin deer irruption debates of the early 1940s; in the essays of A Sand County Almanac, his best known work; and in its current manifestation on the property of the Aldo Leopold Foundation in central Wisconsin. By focusing on these key rhetorical moments in Leopold's ethos formation, this study reveals the sources from which his ethos arose, including nineteenth and early-twentieth century conservation movements and scientific literature, and the specific environmental crises to which he responded. In revealing, on one hand, the rhetorical strategies that excluded or alienated key stakeholders in the issues on which he wrote, and, on the other, his remarkable ability to connect with a range of audiences in a variety of genres,
this study shows that Leopold can serve as both a model and cautionary tale for environmental communication in our own time.

Links:

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Advisor: Hall Kells, Michelle

Committee member: Paine, Charles; Harrison, Gary; Milne, Bruce T.

University/institution: The University of New Mexico

Department: English

University location: United States -- New Mexico

Degree: Ph.D.

Source type: Dissertations & Theses
Causation in a physical world
Abstract: This dissertation offers a new solution to the problem of causation in the physical world. Fundamental physics leaves little space for causation. Causation is local and asymmetric, but physical laws are global and time-symmetric. However, causal notions are indispensable. In particular we need causation to make sense of effective strategies. The problem of causation in the physical world is the challenge of reconciling the a-causal physical picture of the world with the need for causation. Chapter 1 describes the problem in detail and proposes a new methodology to solve it. The proper method to handle the problem isn’t conceptual analysis. Rather, solutions to the problem should be judged on how well they physically explain actual facts about effective strategies. Chapter 2 examines the main attempts to solve the problem. I argue that they all face various problems. In particular, current attempts to locate causation in the physical world all have trouble making sense of the fact that we need causal knowledge to make rational decisions. To solve this problem, the first step is to provide a satisfactory explanation of why only those correlations that are (intuitively) causal can be exploited for the purpose of securing desired outcomes. In chapter 3, I propose such an explanation. I argue that causal
correlations are the only ones that can be exploited according to evidential decision theory (EDT). This is a surprising claim, since EDT is widely thought to recommend acting for the sake of outcomes one cannot cause. I argue that this is actually not the case, and that EDT in fact provides a plausible account of exploitable correlations. In chapter 4, I use this account to offer a new solution to the problem of causation in a physical world. I argue that causal dependence is a matter of the cause and the effect standing in certain probabilistic relations to a third event called a probabilistic intervention. Probabilistic interventions are events that need not involve agency but nonetheless mimic certain crucial features of deliberation. I argue that this account provides a plausible solution to the problem of causation in a physical world.

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School code: 0190

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Country of publication: United States

ISBN: 9781321544015

Advisor: Loewer, Barry

University/institution: Rutgers The State University of New Jersey - New Brunswick

Department: Graduate School - New Brunswick

University location: United States -- New Jersey
Degree: Ph.D.

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Language: English

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Database: ProQuest Dissertations & Theses Global
Abstract: In chapter one, I explore various histories of Western science to uncover six common motifs of eighteenth century race science. In chapter two, I explain how this model of race-science was called into question and eventually replaced by another paradigm, a pre-Mendelian and Darwinian evolutionary model. By the mid-to-late nineteenth century, this evolutionary model established an entirely different idea of biological race marked by (a) a processional notion of species, (b) the use of different methods to determine what constitutes a "race" of people, (c) a definition of race based on the struggle for existence and natural selection, (d) morphology as a social sign of the strength or weakness of a race, and as a consequence, (e) the consideration that certain races--or a mixture of races--will contribute to the demise or degeneration of the best form of government. In chapter three, I explain a second epistemic break in scientific race studies, namely, a break
from a pre-Mendelian evolutionary framework to one where the meaning of race is conceived from the perspective of the ; and further explicate the rise of a a linguistic-conceptual tendency called eliminativism. In chapter four, I turn to the emergence of a different linguistic-conceptual tendency and vision of melioration, referred to in the literature as retentionism or conservationism. In the final chapter, I offer an alternative to both eliminativism and retentionism by turning to the philosophical pragmatism of William James. I argue that four dynamics of James's thought, i.e., relationalism, radical empiricism/pluralism, pragmatism, and social meliorism are helpful for overcoming the limits of the discursive dilemma between eliminativism and retentionism. I then turn to explain a methodological approach I refer to as pragmatic contextualism. I conclude by examining the social practice of racial profiling and suggest that the value of race discourse ought to be judged by both its ameliorative aims and the social consequences it helps produce.

Links:
p;rft.genre=dissertations+%26+theses&amp;rft.jtitle=&amp;rft.atitle=&amp;rft.au=Fagiano%2C+Mark&amp;rft.aulast=Fagiano&amp;rft.aufirst=Mark&amp;rft.date=2014-01-01&amp;rft.volume=&amp;rft.issue=&amp;rft.spage=&amp;rft.isbn=9781321394658&amp;rft.btitle=&amp;rft.title=The+M
Number of pages: 310

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Degree date: 2014

School code: 0665

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Country of publication: United States

ISBN: 9781321394658

Advisor: Stuhr, John J.

Committee member: McAfee, Noelle C.; Willett, Cynthia C.; Rogers, Melvin L.; Taylor, Paul C.

University/institution: Emory University
Department: Philosophy

University location: United States -- Georgia

Degree: Ph.D.

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Document type: Dissertation/Thesis

Dissertation/thesis number: 3666443

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Document URL:

Copyright: Copyright ProQuest, UMI Dissertations Publishing 2014
Radioactive knowledge: State control of scientific information in post-Soviet Kazakhstan

Author: Stawkowski, Magdalena Edyta


Abstract: Drawing on sixteen months of fieldwork in the Semipalatinsk Nuclear Test Site region in Kazakhstan, this ethnography is an account of the local understandings of health, livelihood, and suffering among rural Kazakh communities. Using the 1949-1989 Soviet atomic testing program as a historical backdrop, my research is situated in histories of overlapping regimes, episodes of heightened secrecy, disinformation campaigns, as well as Kazakhstan's contemporary nationalist ambitions to become a leader in the global energy market. In 'Radioactive Knowledge', I
trace the lesser-known history of the Soviet nuclear program from the perspective of people who were most affected by its military-industrial complex, exploring how they cope with their own present-day nuclear challenges.

Links:

School code: 0051

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Country of publication: United States

ISBN: 9781321499025

Advisor: Goldstein, Donna M.

Committee member: Jones, Carla; Shankman, Paul; Ackland, Len; Brown, Kate; Taylor, Bryan

University/institution: University of Colorado at Boulder

Department: Anthropology

University location: United States -- Colorado

Degree: Ph.D.
The Ocean Laboratory: Exploration, Fieldwork, and Science at Sea

Author: Adler, Antony


Abstract: In framing the history of field sciences most historians emphasize terrestrial sites rather than marine ones. But, to ignore marine spaces is to omit an extensive geography to which the abstract notion of "the field" has also been applied. While the importance of laboratories as a space for scientific work has been well established by historians, and though there has been a growing body of recent scholarship on the history of field science, the link between laboratories, ships, museums, and the development of oceanography as a field science has yet to be fully explored. Tracing this history sets the history of oceanography within the larger history of science in the field and thereby offers to the history of science a contribution which bridges two subfields, the history of the development of laboratory and field sciences and the history of the exploration of the marine environment. A central theme of this project is the shifting conception of the research vessel over the period from ca. 1830 to present, as it underwent a
change from the ship as instrument, to the ship as laboratory, and finally, in its most recent incarnation, to the ship as invisible technician operating within an ocean transformed into credible scientific space. Beginning with a description of expeditionary science at the turn of the nineteenth century, this dissertation charts a gradual re-centering of spaces of scientific analysis from the metropole to the field, via the marine station and finally, the research vessel. In doing so, it examines the social, political, and cultural context in which these shifts took place, and reveals an emerging scientific and political discourse equating international cooperation, and progress in marine science. These were both goals of Prince Albert 1st of Monaco; his scientific program, and the oceanographic institutions he founded, helped permanently link these dual agendas. Thus, this study sheds light on the social and cultural processes involved in the emergence of global sciences framed in terms of large-scale systems, both physical and political. Furthermore, by tracing the development of oceans as scientific spaces, this work demonstrates how the idea of a "Pacific World" with roots in nineteenth-century expeditionary science, contributed to the self-conscious geopolitical construction of this concept in the interwar period. Public proclamations about the Pacific World, along with the development of museum exhibits focused on marine science and interpreting the results of oceanographic expeditions, demonstrate the ways in which popular culture and politics interacted with the cultures of marine science. Hence, in the twentieth century, world's fairgrounds on the west coast of the United States became
an important venue for popularizing large-scale science and presenting appeals for scientific internationalism in the Pacific.

Links:
Subject: Science history

Classification: 0585: Science history

Identifier / keyword: Social sciences, Fieldwork, Laboratory, Oceanography, Pacific world

Title: The Ocean Laboratory: Exploration, Fieldwork, and Science at Sea

Number of pages: 307

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Degree date: 2014

School code: 0250

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Place of publication: Ann Arbor
Illusionism: Making the problem of hallucinations disappear

Author: El Ali, Rami
Abstract: My dissertation contributes to a central and ongoing debate in the philosophy of perception concerning the fundamental nature of perceptual states. Such states include cases like seeing, hearing, or tasting, as well as cases of merely seeming to see, hear, or taste. A central question concerning these states arises in light of misperceptual phenomena. While a commonsensical picture of perceptual states construes them as simply relating us to the external and mind independent world's objects, some misperceptual cases suggest that these states fall short of such world contact. The result is that perceptual states are either thought to fundamentally consist in a highest common factor that falls short of perceptual contact with the world, or are thought to be disjunctive in nature, with some cases involving perceptual contact, and others receiving a different analysis. Contrary to these views, I argue that no misperceptual cases compromise perceptual contact with the world's objects, and so perceptual starts are to be thought in terms of relations to the external and mind-independent world. I call this view I defend Pure Relationalism, and the view of misperceptual cases that makes pure relationalism possible Illusionism.

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Subject: Epistemology; Philosophy

Classification: 0393: Epistemology; 0422: Philosophy
Identifier / keyword: Philosophy, religion and theology, Hallucination, Illusion, Mind, Misperception, Perception, Perceptual experience

Title: Illusionism: Making the problem of hallucinations disappear

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Place of publication: Ann Arbor

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Advisor: Chudnoff, Elijah

Committee member: Evnine, Simon; Bueno, Otavio; Schellenberg, Susanna

University/institution: University of Miami

Department: Philosophy (Arts & Sciences)

University location: United States -- Florida

Degree: Ph.D.

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Document type: Dissertation/Thesis

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The 1940s were a crucial period in the development of how the human-machine continuum was
formulated and understood. Over the course of the decade, Americans experienced numerous social and scientific changes, many of which had long lasting effects. As science and technology became increasingly complex during this period, gender norms also experienced significant changes. Changing gender norms both affected how people understood the Self and how they understood the Self's relationship with advanced machines. I explore the relationship between humans and their technological tools by examining science fiction texts published during this period. I read both science fiction texts and contemporary reactions to those texts produced by science fiction fans in a variety of professional and amateur publications. I focus on the U.S. science fiction community, especially the portion linked to Astounding Science-Fiction, which largely embraced closer relationships with technology during this period. However, the same community resisted attempts to redefine the human side of the equation in relation to gender. This dissertation extends the history of science fiction's engagement with the relationship between gendered humans and machines. It argues that while the community often expressed a clear interest in integrating humans more fully with machines and machine systems, it resisted attempts to re-define the human Self as other than white, male and heterosexual. The texts considered here laid the groundwork for later movements but many have been lost with the death of the pulps. It also investigates how fans helped to shape the development of some of the genre's core themes. The ephemeral nature of fan-created texts means that scholarly knowledge of their contents and
influence is partial and incomplete. By restoring fans' voices to the genre's conversation about the relationship between gendered humans and machines, I am able to give a more complete picture of issues that continue to shape science fiction and American culture today.

Links:

The predictive focus account of the principle of simplicity
Abstract: This dissertation presents an account of the Principle of Simplicity, a prominent idea in the philosophy of science. The principle states that when a simple model and a complex model both predict the data, and all else is equal, the data supports the simpler model more. The account, the "Predictive Focus Account," states that simpler models are better confirmed in these contexts because they make narrower, more focused predictions. The introduction presents Principle of Simplicity and the Predictive Focus Account. It defines key terms and explains the dissertation's methodology. This section also flags background issues that go beyond the scope of the dissertation. Chapter 1 investigates the philosophical history of the Predictive Focus Account, and the relationship between a model's simplicity and its "global likelihood." On this account, the explanation of the advantage of simplicity is grounded in relations of Bayesian confirmation between competing models. That is, the advantage of simplicity is a subtle, but inherent, feature of standard Bayesian model evaluation. This chapter argues that the Predictive Focus Account is incomplete without a method for fixing prior probabilities. It proposes a new approach to fixing objective priors, the
"Data Window Prior," grounded in experimental design. The proposed prior bounds the parameters of statistical models and reigns in their predictions, which are a priori unbounded and infinitely extended. So bounded, the models have definite prediction ranges and corresponding degrees of predictive focus. I apply the Data Window Prior to the historical case of Hubble's Law from cosmology, yielding a powerful, intuitive verdict about the confirmation relations between models of varying degree of complexity. Chapter 2 contrasts the Predictive Focus Account with the more popular Bayesian method of "prior-stacking," whereby Bayesians privilege simpler models and hypotheses with higher prior probabilities. The Predictive Focus Account has distinct advantages over the prior-stacking approach: it shows how simplicity can be favored on a posteriori, empirical grounds, and how this favoring relation depends on the nature of the extant data. Chapter 3 contrasts my account with another, based in Akaike's Information Criterion (AIC), a contemporary, non-Bayesian alternative. The AIC is a statistical model selection criterion that describes estimation error. It is designed to quantify and resist "over-fitting" the data with complex models. The main advantage of the Predictive Focus Account (and corresponding Bayesian method) is its generality. It applies to a wider range of cases and supports a broader range of inferences than the AIC.

Links:
http://RT4RF9QN2Y.search.serialssolutions.com/?ctx_ver=Z3
Identifier / keyword: Philosophy, religion and theology, Predictive focus, Simplicity, Bayesian theory, Model selection, Prior probability

Title: The predictive focus account of the principle of simplicity

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The early modern debate on the problem of matter's divisibility: A Neo-Aristotelian solution

Author: Connors, Colin Edward

Abstract: My dissertation focuses on the problem of matter's divisibility in the 17th - 18th centuries. The problem of material divisibility is a focal point at which the
metaphysical principle of simplicity and the mathematical
principle of space's infinite divisibility conflict. The principle
of simplicity is the metaphysical requirement that there
must be a simple or indivisible being that is the constitutive
foundation of all composite things in nature. Without simple
beings, there cannot be composite beings. The
mathematical principle of space's infinite divisibility is a
staple of Euclidean geometry: space must be divisible into
infinitely smaller parts because indivisibles or points cannot
compose extension. Without reconciling these metaphysical
and mathematical principles, one can call into question the
integrity of mathematics and metaphysics. Metaphysical
contradiction results from the application of metaphysical
simplicity to the composition of material bodies that occupy
infinitely divisible space. How can a simple being constitute
a material object while occupying a space that lacks a
smallest part? Should we assume that a composite material
object (such as the paper in front of the reader) exists in an
infinitely divisible space, then the simple beings must
occupy a space that consists of ever smaller spaces. The
simple being thereby appears to consist of parts simpler
than itself—a metaphysical contradiction. Philosophers
resolve this contradiction by either modifying the
metaphysical principle of simplicity to allow for the
occupation of infinitely divisible space, or have simply
dismissed one principle for the sake of preserving the other
principle. The rejection of one principle for preserving the
other principle is an undesirable path. Philosophers would
either forfeit any attempt to account for the composition of
material reality by rejecting simplicity or deny
understanding of geometry heretofore via the rejection of space's infinite divisibility. My objective in this dissertation is two-fold: 1.) to provide an historical analysis of various philosophers' attempts to reconcile simplicity and infinite divisibility or to argue for the exclusive nature of the said principles; 2.) to articulate a reconciliation between simplicity and infinite divisibility. Underlying both objectives is my attempt to draw a connection between the metaphysical principle of simplicity and the metaphysical principle of sufficient reason. Having shown in the historical section that each philosopher implicitly references a modified version of the principle of sufficient reason when articulating their theories of metaphysical simplicity, I will use this common principle to develop a Neo-Aristotelian solution to the problem of material divisibility. This Neo-Aristotelian solution differs from other accounts in the historical section by including a potential parts theory of material divisibility while modifying the principle of simplicity: simple beings are no longer conceived as constitutive parts of a material thing, but as the sources of unity for a natural composite being.

Links:
Identifier / keyword: Philosophy, religion and theology, Divisibility, Infinity, Mathematics, Matter, Metaphysics, Simplicity

Title: The early modern debate on the problem of matter's divisibility: A Neo-Aristotelian solution

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ISBN: 9781321533200
Advisor: Solere, Jean-Luc; Stan, Marius

Committee member: Solere, Jean-Luc; Stan, Marius; Byrne, Patrick; Madigan, Arthur

University/institution: Boston College

Department: GSAS

University location: United States -- Massachusetts

Degree: Ph.D.

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Language: English

Document type: Dissertation/Thesis

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The spectral imagination: American art between science and superstition in the late nineteenth century

Author: Thomas, Adam M.

Abstract: This dissertation explores how tensions between science and superstition were embedded in and constitutive
of the visual arts in late nineteenth-century America. By focusing on the work of artists Henry Alexander (1860-94), William Merritt Chase (1849-1916), Edwin Romanzo Elmer (1850-1923), and Irving Ramsay Wiles (1861-1948), this project examines the interplay of these ostensibly opposing worldviews in painting. It traces how the interdependence of these terms—which were very much in flux during the era—provided a creative paradigm for negotiating the professionalization of science, the nascent discipline of psychology, new theories of perception and memory, as well as attempts to penetrate material and supernatural mysteries broadly. This dissertation reassesses distinctions between so-called realistic and visionary idioms in American art, and it offers a revised conception of the intersections between art and science around 1900.

Links:
Subject: American studies; American history; Art history

Classification: 0323: American studies; 0337: American history; 0377: Art history

Identifier / keyword: Social sciences, Communication and the arts, Paintings, Superstition, Spiritualism, American art, Alexander, Henry, Chase, William Merritt, Elmer, Edwin Romanzo, Wiles, Irving Ramsay

Title: The spectral imagination: American art between science and superstition in the late nineteenth century
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Department: Art and Design

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Document URL:
Using simulations in physics to teach Newton’s third law to high school learners with limited English proficiency: A mixed methods study

Author: Head, Mary Jane


Abstract: My intent in this study was to investigate computer simulations as an instructional approach for high school physics English Language Learners (ELLs). Comparison-group research was employed to assess differences in ELLs' learning with computer simulations demonstrating Newton's Third Law in comparison to learning with a traditional hands-on laboratory approach. My
expectations were that computer simulations would be advantageous to ELLs, regardless of the individual learners' language proficiency levels. I expected that a comparison ELL group engaged in hands-on laboratory experiments would not perform as well as learners in the computer simulations group. A total of 44 ELL students were randomly assigned to two treatment groups (computer simulations group, n = 22; traditional laboratory group, n = 22). Within each treatment group, smaller groups of 3 to 4 students were randomly assigned to work together, resulting in 7 smaller computer simulations groups and 7 smaller traditional hands-on laboratory groups (Appendix D). Attrition resulted in a total of 30 students distributed into treatment groups (computer simulations group, n = 20; traditional laboratory group, n = 10). Data collected for comparison included two measures of conceptual understanding. Gain scores were calculated for pre- and posttest FCI questions. Student journal entries and videotaped speech transcriptions were analyzed and transformed into quantitative frequencies and percentages. Results confirmed simulations assisted ELLs in grasping concepts but didn't support simulations as encouraging conceptual conversation. Results indicated that ELLs learning with simulations were not at a disadvantage in understanding concepts even though they discussed and made fewer journal entries than ELLs learning with traditional hands-on approach. Exploratory in nature, this comparative study was the first of its kind to explore ELLs' conceptual understanding comparing computer simulations and hands-on instructional approaches. The results of this
study lead to recommendations for a more extensive examination of ELLs' use of computer simulations to reinforce ELLs' learning of abstract physics concepts. However, several implications for classroom practices emerged from the findings of this exploratory study. Implications, which are discussed in the final section of the dissertation, include classroom practices related to misconceptions, scaffolding, assisting learners in grasping abstract concepts, and reinforcing conceptual understanding.

Links:

Subject: English as a Second Language; Secondary education; Science education

Classification: 0441: English as a Second Language; 0533: Secondary education; 0714: Science education

Identifier / keyword: Education, Newton's third law, English language learners, Conceptual understanding, Computer simulations, Hands-on laboratory investigations, Physics classes

Title: Using simulations in physics to teach Newton’s third law to high school learners with limited English proficiency: A mixed methods study
Epistemological implications of representational pluralism

Author: Harmon, Ian Thomas

Abstract: In this dissertation I argue that the framework under which epistemology operates should be broadened to account for developments in cognitive science that indicate that a good deal of cognition and reasoning involves the use of non-linguistic representations. In chapter 1, I argue that, although epistemology is the theory of knowledge, epistemologists generally operate as though their field is simply the theory of propositional knowledge. Epistemologists generally assume that knowledge is a certain type of belief relation to a true proposition. However, cognitive science indicates that many of our mental
representations are not belief-like at all, and thereby, not belief relations to propositions. Rather, the mind employs representations that take the form of images, scale models, activation patterns, and so on. I call this claim representational pluralism. If some of these non-linguistic representations are constitutive of knowledge, as I argue that they are in later chapters, then this requires a substantial revision of the traditional epistemological framework. I proceed to introduce some potential consequences of departing from the propositional knowledge tradition in epistemology. These consequences pertain most directly to two issues, namely, philosophical methodology and our understanding of normative standards of rationality. In chapter 2 I discuss knowledge-how, a type of knowledge that many have argued is non-propositional. In the first part of the chapter I discuss two intellectualist positions, that is, positions that hold that know-how is propositional. Stanley and Williamson argue that propositional knowledge is both necessary and sufficient for know-how, while Bengson and Moffett argue that propositional knowledge is not sufficient, but is necessary, for know-how. In chapter 3 I argue that epistemology's failure to take representational pluralism seriously has skewed the field's understanding of normative standards of rationality. I discuss two ways in which epistemology's normative standards of rationality are limited. First, they apply only to agents with purely linguistic or belief-like cognitive systems. Second, they apply only to cognitive systems that are capable of meeting them, due to what I call the ought-can principle. In chapter 4, I examine the role that
knowledge plays in two domains: everyday life and the institution of science. In everyday contexts, I argue that knowledge plays a warrant-granting role for action. This way of thinking about knowledge has drawn some attention in the epistemology literature from Keith DeRose, Jason Stanley, John Hawthorne, and Jeremy Fantl and Matthew McGrath, amongst others. However, I argue that none of these "pragmatic encroachment" approaches draw the correct connection between knowledge and practical affairs. In particular, many of these accounts are designed to be supplements to more traditional, independent accounts of knowledge. In chapter 5, I present summaries of the preceding chapters. I then conclude that epistemology, in order to be the theory of knowledge, rather than the theory of propositional knowledge, must become more pluralistic. This is not to say that we need to abandon studies of propositional knowledge. But rather, epistemology as a field should become more fragmented, specialized, and connected to scientific accounts of the mind and cognition. (Abstract shortened by UMI.)

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Abstract: Virtually all prominent critics of the Pessimistic Induction have so far assumed that in order to defeat the argument, one must show that there is a degree of
continuity in the history of science at the level of theory. In my dissertation I challenge this assumption and argue for three theses: (I) The assumption in question can lend support to at best a very impoverished form of optimism about only bits and pieces of our best scientific theories is warranted. (II) A more promising strategy is possible: The Pessimistic Induction can be defeated if we can show that the evidence today's scientific community has for our best theories is qualitatively and quantitatively superior to the evidence past scientists had for their best theories. (III) The evidence today's scientific community has for some of our best theories (such as the Fermi-Landau Liquid theory) is unequivocally better than its historical predecessors, while there is no observable unequivocal improvement as far as the evidence we have for the theories in behavioral and medical sciences is concerned.

Links:
Subject: Epistemology; Philosophy of Science

Classification: 0393: Epistemology; 0402: Philosophy of Science

Identifier / keyword: Philosophy, religion and theology, Scientific realism, Pessimistic induction, Evidence, Epistemology of science, Theory change, Exemptionism, Generalism, Partialism, Growth of science, Simulationist science

Title: The pessimistic induction and the epistemic status of scientific theories
Abstract: "Science Fairs before Sputnik: Adolescent Scientific Culture in Contemporary America" traces the formation and evolution of science fairs in America, focusing on the ways in which adolescents established communities of practice by engaging in these competitions. Over the course of the twentieth century, generations of American children conducted their first experiments by crafting science fair projects. The dissertation evaluates this understudied phenomenon against the backdrop of American fascinations and fears of science and evolving notions of
adolescence. It argues that science fairs were central to shaping an adolescent scientific culture in the United States during the early to mid twentieth century. The research is grounded in a source base that includes thousands of photographs of science fair displays, project descriptions written by students, museum collections of equipment, toys, and apparatus, scientific trade literature, popular magazines, and archival collections of sponsoring organizations. In reviewing this range of materials, the dissertation demonstrates how the meanings of science fairs were tied to widespread apprehensions regarding modern scientific advancements, negotiations between adolescents and adults over who held authority, the development of a children's consumer culture, and broader debates regarding the role scientifically inclined youth would play in shaping the nation's future. While acknowledging the ways in which adults orchestrated the science fair movement, "Science Fairs before Sputnik" evaluates these competitions from a child's eye view, tracing how these competitions fostered the development of communities of practice. For adolescents, science fairs were a place to demonstrate their scientific acumen, develop relationships with like-minded peers, and perhaps most importantly, have fun. Science fairs also raise important philosophical questions regarding the epistemology of children's experimentation. From vibrant three-dimensional dioramas of the Progressive era to postwar argument-driven text panels, science fair displays reveal students' changing beliefs about what counted as faithful scientific evidence. Science fairs, in essence,
provide an entry point for understanding how adolescents conceived of science on material, social, and epistemological terms over the course of the twentieth century.

Links:

Metaphors from quantum physics: Enhancing ecological L2 social networking in an intermediate Italian course

Author: Renigar, Paul Gordon, Jr.

Abstract: This dissertation discusses a case study of the pedagogical uses of social media as part of a larger ecological framework for language learning and critical discourse studies that was conducted during the spring 2014 semester of intermediate Italian. It was organized to balance postmodern theories with metaphors drawn from quantum physics. Every aspect of the course, and each interaction outside of class (including multimodal online resources), avoided the cause-and-effect approach often found in task-based and computer assisted language learning. Second language learners adapted to the paradoxical engagement of language and identity as simultaneous process and product, while reducing neither to fiction. The study broadly adapted a socio-cognitive-ecological approach (Larsen-Freeman, 2012) to shift the focus from differences in technology or method to the participants' perception of human possibilities through the affordances of technology. Participants were trained to navigate dynamic levels of ambiguity and possibilities of meaning while facing the static requirement by the
academic institution to pass quizzes and exams, and complete homework assignments on the basis of a 'correct' answer. Recent studies in quantum physics and consciousness provided an elegant model that allows for the coexistence of seeming opposites. Agency, which was central to the participants' experience of discovery and play with variants within the elusive 'standard', allowed for conformity to, or deviation from, the collective. Data collection and analysis adapted 'system analysis' so that interpretation was within a more contextualized understanding of the emergence of complex systems resulting from self-organization, self-selection and co-evolutionary symbiosis. Adaptive teaching was used to meet the needs of the participants by beginning with outcomes and then working backward to explore why certain approaches, tools and tasks were, or were not, effective. The insights gleaned from the study demonstrate that higher levels of critical L2 discursive analysis enhanced by human-machine interactions do not require relegation to upper level division SLA courses. The participants' self-selected samples of their work reveal a story that is complex, dynamic and very human, told through the voices of those most often ignored in the processes of language planning, assessment and curriculum development.

Links:
Subject: Epistemology; Foreign Language; Multicultural Education
Classification: 0393: Epistemology; 0444: Foreign Language; 0455: Multicultural Education

Identifier / keyword: Philosophy, religion and theology, Education, Complexity theory, Dynamic systems theory, Language ecology, Metaphors, Performativity, Quantum physics

Title: Metaphors from quantum physics: Enhancing ecological L2 social networking in an intermediate Italian course

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Genetic legacies of 10,000 years of environmental changes on forest trees

Author: Lumibao, Candice Y.

Abstract: Global climate change and human land-use are two main threats affecting species and ecosystems, driving species extinction and biodiversity loss around the world. A critical issue at the forefront of these accelerating
environmental changes is their impacts on long-term persistence and survival of species. Addressing this issue requires an understanding of how species, populations and communities have responded to different degrees of environmental perturbations in the past. Lessons from the past provide important evidence needed for a better characterization of the long-term consequences of these large-scale 20th century environmental changes and beyond. My dissertation examines how environmental changes throughout the Quaternary (last 2.6 million years) impact patterns of genetic diversity through time. I examined two historical processes that have had the greatest impact in shaping genetic diversity among species and populations: past climatic oscillations since the last glacial period and the extensive regional forest clearance in the last 500 years. First, I assessed the coherence of the impacts of climate-driven range expansions on range-wide patterns of plant genetic diversity between Europe and Eastern North America. I showed that range-wide patterns of genetic diversity in plant taxa arising from these climate-driven range expansions markedly differed between Europe and ENA as a likely consequence of idiosyncratic features of each continent, for instance, biogeography e.g., presence of barrier to migration and climatic histories e.g. severity of climatic oscillations. Second, patterns of colonization can impact establishment and maintenance of genetic diversity in populations. I examined how presence and spread from small populations from farther north can influence maintenance of genetic diversity in a temperate tree species. I potentially provided the first empirical evidence of
existence of ancient small populations farther north than commonly assumed and the early establishment of genetic diversity in these ancient populations. Finally, I showed that the extent of genetic impacts of the large-scale demographic declines due to extensive regional deforestations in the last 500 years varied between different habitats and between ecologically-similar forest tree species. By explicitly examining these past processes at different temporal and spatial scale, my work provides a better and more complete picture of the long-term genetic consequences of past large-scale environmental changes on tree species. These insights are important and greatly needed in a better formulation of conservation and management strategies under accelerating environmental changes in the 21st century and beyond.

Links:
Subject: Ecology; Paleoecology; Environmental science

Classification: 0329: Ecology; 0426: Paleoecology; 0768: Environmental science

Identifier / keyword: Biological sciences, Health and environmental sciences, Earth sciences, Ancient DNA, Phylogeography, Population genetics, Climate change, Quaternary, Genetic diversity

Title: Genetic legacies of 10,000 years of environmental changes on forest trees
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