

References

Aktuell

COPPOLA 2014

Raymond Joseph Coppola, *Degrees of Freedom, The Experience of Character Armor and its Gradual Softening*. Dissertation, Pacifica Graduate Institute ([Santa Barbara 2014](#)).

Comprising patterns of chronic tension that inhibit natural pulsation in the body, and similarly fixed patterns in behavior and relationship, character armor is implicated as the underlying substrate of all psychological problems. The softening of such armor is addressed in the tributaries of body psychotherapy whose source, largely, can be traced to the headwaters of Wilhelm Reich's work. Focused through the lens of heuristic inquiry, this study explores the researcher's experience as a patient in psychiatric orgone therapy (the form of therapy Reich originated), together with the experience in body psychotherapy of four co-researchers. It was intended that the research not only elucidate the phenomena being examined, but also cast light inward on the transformed subjectivity of the researcher and coresearchers.

SCHMIDT 2017

Ana Lucía Schmidt et al., *Anatomy of news consumption on Facebook*. *PNAS* **114** (2017), 3035–3039.

Ana Lucía Schmidt, Fabiana Zollo, Michela Del Vicario, Alessandro Bessi, Antonio Scala, Guido Caldarelli, H. Eugene Stanley & Walter Quattrociocchi

The advent of social media and microblogging platforms has radically changed the way we consume information and form opinions. In this paper, we explore the anatomy of the information space on Facebook by characterizing on a global scale the news consumption patterns of 376 million users over a time span of 6 y (January 2010 to December 2015). We find that users tend to focus on a limited set of pages, producing a sharp community structure among news outlets. We also find that the preferences of users and news providers differ. By tracking how Facebook pages “like” each other and examining their geolocation, we find that news providers are more geographically confined than users. We devise a simple model of selective exposure that reproduces the observed connectivity patterns.

Keywords: computational social science | Facebook | news consumption | misinformation

Significance: Social media heavily changed the way we get informed and shape our opinions. Users' polarization seems to dominate news consumption on Facebook. Through a massive analysis on 920 news outlets and 376 million users, we explore the anatomy of news consumption on Facebook on a global scale. We show that users tend to confine their attention on a limited set of pages, thus determining a sharp community structure among news outlets. Furthermore, our findings suggest that users have a more cosmopolitan perspective of the information space than news providers. We conclude with a simple model of selective exposure that well reproduces the observed connectivity patterns.

SONG 2017

Shufeng Song, Masashi Kotobuki, Feng Zheng, Chaohe Xu, Serguei V. Savilov, Ning Hu, Li Lu, Yu Wang & Wei Dong Z. Li, *A hybrid polymer/oxide/ionic-liquid solid electrolyte for Na-metal batteries*. *Journal of Materials Chemistry A* (2017), preprint, 1–8. DOI:10.1039/c6ta11165c.

The development of solid electrolytes with superior electrical and electrochemical performances for the room-temperature operation of sodium (Na)-based batteries is at the infant stage and still remains a challenge. Herein, we, for the first time, report hybrid solid electrolytes consisting of PEO₂₀-NaClO₄-5% SiO₂-x% Emim FSI (x = 50, 70) designed for solid-state Na-metal batteries. The hybrid design yields a solid electrolyte featuring a high room-temperature ionic conductivity of 1.3 · 10⁻³ S cm⁻¹, suitable mechanical property, a wide voltage stability window of 4.2 V and a high Na⁺ transference number of 0.61. A prototypical Na-metal battery using this hybrid solid electrolyte demonstrates promising longterm cycling performances at room temperature and at an elevated temperature of 60 °C for 100 cycles. The finding implies that the hybrid solid electrolyte is promising for Na-metal batteries operating at room temperature.

Anthropologie

QUILES 2017

Carlos Quiles, *Indo-European demic diffusion model*. Dissertation, University of Extremadura (Badajoz 2017).

VENKATARAMAN 2017

Vivek V. Venkataraman, Thomas S. Kraft, Nathaniel J. Dominy & Kirk M. Endicott, *Hunter-gatherer residential mobility and the marginal value of rainforest patches*. *PNAS* **114** (2017), 3097–3102.

The residential mobility patterns of modern hunter-gatherers broadly reflect local resource availability, but the proximate ecological and social forces that determine the timing of camp movements are poorly known. We tested the hypothesis that the timing of such moves maximizes foraging efficiency as hunter-gatherers move across the landscape. The marginal value theorem predicts when a group should depart a camp and its associated foraging area and move to another based on declining marginal return rates. This influential model has yet to be directly applied in a population of hunter-gatherers, primarily because the shape of gain curves (cumulative resource acquisition through time) and travel times between patches have been difficult to estimate in ethnographic settings. We tested the predictions of the marginal value theorem in the context of hunter-gatherer residential mobility using historical foraging data from nomadic, socially egalitarian Batek hunter-gatherers (n = 93 d across 11 residential camps) living in the tropical rainforests of Peninsular Malaysia. We characterized the gain functions for all resources acquired by the Batek at daily timescales and examined how patterns of individual foraging related to the emergent property of residential movements. Patterns of camp residence times conformed well with the predictions of the marginal value theorem, indicating that communal perceptions of resource depletion are closely linked to collective movement decisions. Despite (and perhaps because of) a protracted process of deliberation and argument about when to depart camps, Batek residential mobility seems to maximize group-level foraging efficiency.

roots of the P-work and its conception as an overarching “story,” which provides a cosmological framework for legislation and history as charter myth, are to be posited in the 9th to 8th-century,¹⁰¹ whereas the main strata are at home in the Judean monarchy of the 7th-century.

Biologie

ALTENBERG 2017

Lee Altenberg, Uri Liberman & Marcus W. Feldman, *Unified reduction principle for the evolution of mutation, migration, and recombination*. [PNAS 114 \(2017\), E2392–E2400](#).

Modifier-gene models for the evolution of genetic information transmission between generations of organisms exhibit the reduction principle: Selection favors reduction in the rate of variation production in populations near equilibrium under a balance of constant viability selection and variation production. Whereas this outcome has been proven for a variety of genetic models, it has not been proven in general for multiallelic genetic models of mutation, migration, and recombination modification with arbitrary linkage between the modifier and major genes under viability selection. We show that the reduction principle holds for all of these cases by developing a unifying mathematical framework that characterizes all of these evolutionary models.

Keywords: mutation | recombination | dispersal | modifier genes | external stability

Significance: Evolution by Darwinian natural selection can not only shape how organisms survive and reproduce, but also affect transmission of genetic and other information between generations. Modifier-gene models for the evolution of information transmission have revealed a universal tendency for more faithful transmission to evolve in populations at equilibrium where natural selection is balanced by errors in information transmission. This is shown to be a very general property of models that include mutation and migration under selection and recombination under selection on diploids. The breadth of this reduction principle focuses attention on the departures from its mathematical assumptions, which may explain those biological phenomena of information transmission between generations for which the reduction principle fails.

MACIVER 2017

Malcolm A. MacIver, Lars Schmitz, Ugurcan Mugan, Todd D. Murphey & Curtis D. Mobley, *Massive increase in visual range preceded the origin of terrestrial vertebrates*. [PNAS 114 \(2017\), E2375–E2384](#).

The evolution of terrestrial vertebrates, starting around 385 million years ago, is an iconic moment in evolution that brings to mind images of fish transforming into four-legged animals. Here, we show that this radical change in body shape was preceded by an equally dramatic change in sensory abilities akin to transitioning from seeing over short distances in a dense fog to seeing over long distances on a clear day. Measurements of eye sockets and simulations of their evolution show that eyes nearly tripled in size just before vertebrates began living on land. Computational simulations of these animal’s visual ecology show that for viewing objects through water, the increase in eye size provided a negligible increase in performance. However, when viewing objects through air, the increase in eye size provided a large increase in performance. The jump in eye size was, therefore, unlikely to have arisen for seeing through water and instead points to an unexpected hybrid

of seeing through air while still primarily inhabiting water. Our results and several anatomical innovations arising at the same time suggest lifestyle similarity to crocodiles. The consequent combination of the increase in eye size and vision through air would have conferred a 1 million-fold increase in the amount of space within which objects could be seen. The “buena vista” hypothesis that our data suggest is that seeing opportunities from afar played a role in the subsequent evolution of fully terrestrial limbs as well as the emergence of elaborated action sequences through planning circuits in the nervous system.

Keywords: fish–tetrapod transition | vision | visual ecology | terrestriality | prospective cognition

Significance: Starting 385 million years ago, certain fish slowly evolved into legged animals living on land. We show that eyes tripled in size and shifted from the sides to the top of the head long before fish modified their fins into limbs for land. Before permanent life on land, these animals probably hunted like crocodiles, looking at prey from just above the water line, where the vastly higher transparency of air enabled longdistance vision and selected for larger eyes. The “buena vista” hypothesis that our study forwards is that seeing opportunities far away provided an informational zip line to the bounty of invertebrate prey on land, aiding selection for limbs—first for brief forays onto land and eventually, for life there.

Klima

MOORE 2017

Christopher R. Moore et al., *Widespread platinum anomaly documented at the Younger Dryas onset in North American sedimentary sequences*. *Scientific Reports* 7 (2017), 44031. DOI:10.1038/srep44031. SciRep07-44031-Supplement.pdf

Christopher R. Moore, Allen West, Malcolm A. LeCompte, Mark J. Brooks, I. Randolph Daniel Jr., Albert C. Goodyear, Terry A. Ferguson, Andrew H. Ivester, James K. Feathers, James P. Kennett, Kenneth B. Tankersley, A. Victor Adedeji & Ted E. Bunch

Previously, a large platinum (Pt) anomaly was reported in the Greenland ice sheet at the Younger Dryas boundary (YDB) (12,800 Cal B.P.). In order to evaluate its geographic extent, fire-assay and inductively coupled plasma mass spectrometry (FA and ICP-MS) elemental analyses were performed on 11 widely separated archaeological bulk sedimentary sequences. We document discovery of a distinct Pt anomaly spread widely across North America and dating to the Younger Dryas (YD) onset. The apparent synchronicity of this widespread YDB Pt anomaly is consistent with Greenland Ice Sheet Project 2 (GISP2) data that indicated atmospheric input of platinum-rich dust. We expect the Pt anomaly to serve as a widely-distributed time marker horizon (datum) for identification and correlation of the onset of the YD climatic episode at 12,800 Cal B.P. This Pt datum will facilitate the dating and correlating of archaeological, paleontological, and paleoenvironmental data between sequences, especially those with limited age control.

Kultur

KÄHLER HOLST 2013

Mads Kähler Holst, Marianne Rasmussen, Kristian Kristiansen & Jens-Henrik Bech, *Bronze Age ‘Herostrats’, Ritual, Political, and*

Domestic Economies in Early Bronze Age Denmark. *Proceedings of the Prehistoric Society* **79** (2013), 1–32.

In this article we argue that within the Danish Bronze Age there was a short-lived period (roughly 1500–1150 BC) that witnessed a dramatic investment of resources into the construction of monumental architecture in the form of barrows and long houses. These investments had far-reaching long-term effects on the local landscape with negative consequences for agricultural productivity. We use two extraordinary well-documented excavations of a barrow (Skelhøj) and a long house (Legaørd) as a model for labour organisation and resource allocation, which is calculated against the number of barrows and long houses recorded in the Danish Sites and Monuments database for the period. An astonishing minimum of 50,000 barrows were constructed, devastating an estimated 120,000–150,000 hectares of grassland. During the same time period an estimated 200,000 long houses were constructed and renewed every 30–60 years. In densely settled regions the effects are easily recognisable in pollen diagrams as a near-complete deforestation. Thereby, the productive potential of the economy was, in effect, reduced.

The situation was unsustainable in a long-term perspective and, at least on a local scale, it implied the risk of collapse. On the other hand, the exploitation of resources also appears to have entailed a new way of operating in the landscape, which led to a new organisation of the landscape itself and a restructuring of society in the Late Bronze Age. The intense character of these investments in monumental architecture is assumed to rely primarily on ritual and competitive rationales, and it exemplifies how the overall economy may be considered an unstable or contradictory interplay between ritual, political, and domestic rationales.¹

Keywords: Early Bronze Age | Denmark | barrow | long house | economy | deforestation | labour organisation

Religion

HODGE 2011

K. Mitch Hodge, *Why immortality alone will not get me to the afterlife*. *Philosophical Psychology* **24** (2011), 395–410.

Recent research in the cognitive science of religion suggests that humans intuitively believe that others survive death. In response to this finding, three cognitive theories have been offered to explain this: the simulation constraint theory (Bering, 2002); the imaginative obstacle theory (Nichols, 2007); and terror management theory (Pyszczynski, Rothschild, & Abdollahi, 2008). First, I provide a critical analysis of each of these theories. Second, I argue that these theories, while perhaps explaining why one would believe in his own personal immortality, leave an explanatory gap in that they do not explain why one would intuitively attribute survival of death to others. To fill in the gap, I offer a cognitive theory based on offline social reasoning and social embodiment which provides for the belief in an eternal social realm in which the deceased survive—the afterlife.

Keywords: Afterlife | Cartesian Substance Dualism | Explanatory Gap | Imaginative Obstacle | Immortality | Intuitive Beliefs | Offline Social Reasoning | Simulation Constraint | Social Embodiment | Terror Management Theory

HODGE 2018

K. Mitch Hodge & Paulo Sousa, *Dualism, Disembodiment and the Divine*, *Supernatural Agent Representations in CSR*. In: *A New Synthesis*,

Cognition, Evolution, and History in the Study of Religion. ([forthcoming 2018](#)), 1–17.

The authors argue that contrary to the current trend in the cognitive science of religion (CSR), supernatural agents are not intuitively represented by the folk as disembodied minds as the theory of intuitive dualism suggests. Instead, it is argued that a thesis of social embodiment regarding those representations is wholly compatible with the growing body of empirical evidence. Once researchers stop looking for embodiment in mundane biological processes and focus on social relationships, the signs of embodiment will appear.

Keywords: Dualism | disembodied minds | supernatural agent representations | social embodiment | theory of mind | cognitive science of religion

Story or Book

SPINRAD 2017

Norman Spinrad, *Mr Singularity, Identity crisis.* [nature 543](#) (2017), 582.