

ANTHROPOLOGY

Ryzewski, K. (2015). No home for the “ordinary gamut”: A historical archaeology of community displacement and the creation of Detroit, City Beautiful. *Journal of Social Archaeology*, 15(3), 408-431. <http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84947290436&partnerID=40&md5=22b1937dee5efd7f0a4fa0cc4041b2f7>.

Michigan Central Station and Roosevelt Park were constructed between 1908 and 1918 as part of Detroit's City Beautiful Movement. The construction process was a place-making effort designed to implant order on the urban landscape that involved the displacement of a community who represented everything that city planners sought to erase from Detroit's city center: overcrowding, poverty, immigrants, and transient populations. Current historical archaeological research reveals how the existing ornamental landscape of Roosevelt Park masks the history of a forgotten working-class neighborhood. This synthesis of archival and material evidence details the conditions of life within the neighborhood and of a contentious, decade-long displacement struggle rooted in the inequalities of early-20th-century industrial capitalism. Positioned at the start of a century of controversial urban planning initiatives, the Roosevelt Park case study encourages understandings of displacement as a process that has diachronic and comparative dimensions, both in Detroit and in other urban settings. © 2015, © The Author(s) 2015.

BIOLOGICAL SCIENCES

Wu, B., Buljic, A., & Hao, W. (2015). Extensive horizontal transfer and homologous recombination generate highly chimeric mitochondrial genomes in yeast. *Molecular Biology and Evolution*, 32(10), 2559-2570. <http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943421780&partnerID=40&md5=ef84a5f270cc85e442b1af871c14cc72>.

The frequency of horizontal gene transfer (HGT) in mitochondrial DNA varies substantially. In plants, HGT is relatively common, whereas in animals it appears to be quite rare. It is of considerable importance to understand mitochondrial HGT across the major groups of eukaryotes at a genome-wide level, but so far this has been well studied only in plants. In this study, we generated ten new mitochondrial genome sequences and analyzed 40 mitochondrial genomes from the Saccharomycetaceae to assess the magnitude and nature of mitochondrial HGT in yeasts. We provide evidence for extensive, homologous-recombination-mediated, mitochondrial-to-mitochondrial HGT occurring throughout yeast mitochondrial genomes, leading to genomes that are highly chimeric evolutionarily. This HGT has led to substantial intraspecific polymorphism in both sequence content and sequence divergence, which to our knowledge has not been previously documented in any mitochondrial genome. The unexpectedly high frequency of mitochondrial HGT in yeast may be driven by frequent mitochondrial fusion, relatively low mitochondrial substitution rates and pseudohyphal fusion to produce heterokaryons. These findings suggest that mitochondrial HGT may play an important role in genome evolution of a much broader spectrum of eukaryotes than previously appreciated and that there is a critical need to systematically study the frequency, extent, and importance of mitochondrial HGT across eukaryotes. © The Author 2015. Published by Oxford University Press on behalf of the Society for Molecular Biology and Evolution.

CHEMISTRY

Hitihami-Mudiyanselage, A., Arachchige, M. P., Seda, T., Lawes, G., & Brock, S. L. (2015). Synthesis

and Characterization of Discrete FexNi₂-xP Nanocrystals (0 x 2): Compositional Effects on Magnetic Properties. *Chemistry of Materials*, 27(19), 6592-6600.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84944097401&partnerID=40&md5=d450a8550d995895d6b92017b3b90404>.

Ternary FexNi₂-xP (0 x 2) phases exhibit a range of useful properties that can be augmented or tuned by confinement to the nanoscale including hydrotreating catalytic activity for small x and near-room temperature ferromagnetism for high x . In this work, a solution-phase arrested-precipitation method was developed for the synthesis of FexNi₂-xP over all values of x (0 x 2). The synthesis involves preparation of Ni-P amorphous particles, introduction of the Fe precursor to form amorphous Fe-Ni-P particles, and high-temperature conversion of Fe-Ni-P particles into crystalline ternary phosphide nanocrystals. The ternary FexNi₂-xP nanocrystals crystallize in the hexagonal Fe₂P-type structure, and the morphology of the nanocrystals showed a distinct compositional dependence, transitioning from about 11 nm diameter spheres to rods with aspect ratios approaching 2 as the Fe fraction is increased ($x \geq 1.2$). Lattice parameters do not follow Vegard's law, consistent with Mössbauer data showing preferential site occupation by Fe of the tetrahedral over the square pyramidal sites at low Fe concentrations, and the opposite effect for $x > 0.8$. Magnetic measurements of FexNi₂-xP ($x = 1.8, 1.4, \text{ and } 1.2$) nanorods showed a strong compositional dependence of the Curie temperature (TC) that differs from observations in bulk phases, with the highest TC (265 K) obtained for $x = 1.4$. © 2015 American Chemical Society.

Klapötke, T. M., Stiasny, B., Stierstorfer, J., & Winter, C. H. (2015). Energetic Organic Peroxides - Synthesis and Characterization of 1,4-Dimethyl-2,3,5,6-tetraoxabicyclo [2.2.1]heptanes. *European Journal of Organic Chemistry*, 2015(28), 6237-6242.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942501896&partnerID=40&md5=f566f1429e219f135719dbe3ad353f82>.

1,4-Dimethyl-2,3,5,6-tetraoxabicyclo[2.2.1]heptane and several similar alkyl-derivatives were synthesized applying two different strategies. Crystal structures of the compounds were determined and their energetic properties including sensitivities towards impact, friction and electrostatic discharge as well as their thermal behaviour were determined and compared to tricetone triperoxide (TATP). The enthalpies of formation and the resulting explosive properties were calculated using the EXPLO5 program. Energetic organic peroxides - simple, strong and sensitive: This contribution reports on the synthesis of tetraoxabicyclo heptanes which are easy accessible by HO$ and alkyl-acetyl-acetones. All obtained compounds are highly energetic and sensitive toward mechanical stimuli such as impact and friction. The picture shows the moment of decomposition on a hot copper plate. Copyright © 2015 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.$

CLASSICAL AND MODERN LANGUAGES, LITERATURES AND CULTURES

Koehler, J. (2015). Im Reich der Wünsche by Shawn C. Jarvis (review). *Marvels and Tales*, 29(1), 150-152. <http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943517786&partnerID=40&md5=ae0bde493dbce1292f3ceced91efa8e3>.

(no abstract available)

CRIMINAL JUSTICE

Dembo, R., Briones-Robinson, R., Barrett, K., Winters, K. C., Ungaro, R., Karas, L., . . . Wareham, J. (2015). The Validity of Truant Youths' Marijuana Use and Its Impact on Alcohol Use and Sexual Risk Taking. *Journal of Child and Adolescent Substance Abuse, 24*(6), 355-365.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943347570&partnerID=40&md5=a71e401ca2ef89dc454b810a65e1a1e6>.

Few studies investigating the validity of marijuana use have used samples of truant youths. In the current study, self-reports of marijuana use are compared with urine test results for marijuana to identify marijuana underreporting among adolescents participating in a longitudinal brief intervention for drug-involved truant youths. It was hypothesized that marijuana underreporting would be associated with alcohol underreporting and engaging in sexual risk behaviors. The results indicated marijuana underreporting was significantly associated with self-denial of alcohol use, but not associated with sexual risk behavior. Also, there was an age effect in marijuana use underreporting such that younger truant youths were more likely to underreport marijuana use, compared to older truant youths. Implications for policy and future research are discussed. © 2015, Taylor & Francis Group, LLC.

Lambert, E. G., Hogan, N. L., Griffin, M. L., & Kelley, T. (2015). The correctional staff burnout literature. *Criminal Justice Studies, 28*(4), 397-443.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942833620&partnerID=40&md5=e02c7018f51b46981af35e1bac3856ba>.

Correctional staff job burnout is costly to all involved. As such, it has generated a growing body of research. This study reviewed 53 empirical studies of correctional staff burnout and two review articles published between 1981 and 2014. The majority of studies focused on staff working in a variety of institutional positions, fewer studies focused exclusively on the subgroup of correctional officers, and even fewer focused on a different subgroup. The majority of studies also involved staff at US government-run adult prisons. Most but not all studies utilized Maslach's Burnout Inventory. Research on the antecedents of job burnout among correctional staff is more common than research on the possible consequences or outcomes of job burnout. Interestingly, despite the empirical emphasis on antecedents of burnout, there has been almost no research on effective interventions designed to deal with correctional staff burnout. Based on this narrative review, significant gaps remain in the research on correctional staff burnout. © 2015 Taylor & Francis.

ECONOMICS

Lin, X. (2015). Utilizing spatial autoregressive models to identify peer effects among adolescents. *Empirical Economics, 49*(3), 929-960.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942499986&partnerID=40&md5=93fa6db2a523e19a0a1845d02d95c3a1>.

This study analyzes peer influences in a variety of adolescent developmental outcomes and explores the robustness of the results with regard to alternative specifications of the interaction matrix and the model. I employ the spatial autoregressive (SAR) model with group fixed effects in Lee et al. (*Econom J* 13(2):145–176, 2010) to separately identify endogenous, contextual, and correlated effects. I find evidence for both endogenous and contextual effects for all outcomes under consideration, even after controlling for confounding effects. I also find that a simple spatial weights matrix with equal weight among friends will serve the estimation purpose satisfactorily for the standard SAR model with a single row-normalized weighting matrix. The results are sensitive to the friendship reciprocity assumption as well as alternative model specifications. © 2015, Springer-Verlag Berlin Heidelberg.

ENGLISH

Eggy, S., Barton, E., Winckles, A., Penner, L. A., & Albrecht, T. L. (2015). A disparity of words: Racial differences in oncologist-patient communication about clinical trials. *Health Expectations*, 18(5), 1316-1326. <http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942292853&partnerID=40&md5=7fcf514ea7228748df571392855c4724>.

Background: African Americans are consistently underrepresented in cancer clinical trials. Minority under-enrolment may be, in part, due to differences in the way clinical trials are discussed in oncology visits with African American vs. White patients. Objective: To investigate differences in oncologist-patient communication during offers to participate in clinical trials in oncology visits with African American and White patients. Methods: From an archive of video-recorded oncology visits, we selected all visits with African American patients that included a trial offer ($n = 11$) and a matched sample of visits with demographically/medically comparable White patients ($n = 11$). Using mixed qualitative-quantitative methods, we assessed differences by patient race in (i) word count of entire visits and (ii) frequency of mentions and word count of discussions of clinical trials and key elements of consent. Results: Visits with African American patients, compared to visits with White patients, were shorter overall and included fewer mentions of and less discussion of clinical trials. Also, visits with African Americans included less discussion of the purpose and risks of trials offered, but more discussion of voluntary participation. Discussion and conclusions: African American patients may make decisions about clinical trial participation based on less discussion with oncologists than do White patients. Possible explanations include a less active communication style of African Americans in medical visits, oncologists' concerns about patient mistrust, and/or oncologist racial bias. Findings suggest oncologists should pay more conscious attention to developing the topic of clinical trials with African American patients, particularly purpose and risks. © 2015 John Wiley & Sons Ltd.

MATHEMATICS

Bao, J., Lam, N., & Lu, G. (2016). Polyharmonic equations with critical exponential growth in the whole space \mathbb{R}^n . *Discrete and Continuous Dynamical Systems- Series A*, 36(2), 577-600.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942342326&partnerID=40&md5=02258fcc4aa618d45150146738a00c99>.

In this paper, we apply the sharp Adams-type inequalities for the Sobolev space $W^{m, n/m}(\mathbb{R}^n)$ for any positive real number m less than n , established by Ruf and Sani [46] and Lam and Lu [30, 31], to study polyharmonic equations in \mathbb{R}^{2m} . We will consider the polyharmonic equations in \mathbb{R}^{2m} of the form $(I-\Delta)^m u = f(x; u)$ in \mathbb{R}^{2m} . We study the existence of the nontrivial solutions when the nonlinear terms have the critical exponential growth in the sense of Adams' inequalities on the entire Euclidean space. Our approach is variational methods such as the Mountain Pass Theorem ([5]) without Palais-Smale condition combining with a version of a result due to Lions ([39, 40]) for the critical growth case. Moreover, using the regularity lifting by contracting operators and regularity lifting by combinations of contracting and shrinking operators developed in [14] and [11], we will prove that our solutions are uniformly bounded and Lipschitz continuous. Finally, using the moving plane method of Gidas, Ni and Nirenberg [22, 23] in integral form developed by Chen, Li and Ou [12] together with the Hardy-Littlewood-Sobolev type inequality instead of the maximum principle, we prove our positive solutions are radially symmetric and

monotone decreasing about some point. This appears to be the first work concerning existence of nontrivial nonnegative solutions of the Bessel type polyharmonic equation with exponential growth of the nonlinearity in the whole Euclidean space.

Zhang, Z. (2015). How Many Numerical Eigenvalues Can We Trust? *Journal of Scientific Computing*, 65(2), 455-466. <http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84944177094&partnerID=40&md5=48d290c8c5207e2b1e645fa48bf7d2ad>.

When using finite element and finite difference methods to approximate eigenvalues of 2mth-order elliptic problems, the number of reliable numerical eigenvalues can be estimated in terms of the total degrees of freedom N in resulting discrete systems. The truth is worse than what we used to believe in that the percentage of reliable eigenvalues decreases with an increased N , even though the number of reliable eigenvalues increases with N . © 2014, Springer Science+Business Media New York.

PHILOSOPHY

Kim, E. J. K. (2015). Acceptability, Impartiality, and Preemptory Norms of General International Law. *Law and Philosophy*, 34(6), 661-697.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942985163&partnerID=40&md5=edc5a6106d52cfed467c840fb2197e32>.

Preemptory norms of general international law (*jus cogens*) are universally binding prohibitions that override any consideration for non-compliance (e.g., genocide and slavery). The question is how nonconsensual norms emerge from a consensual international legal order. It appears that either the preemptoriness of *jus cogens* renders consent superfluous to the norm's binding force or consent divests *jus cogens* of its preemptory status. The goal of this paper is to resolve the dilemma by explaining why *jus cogens* is exempt from the general requirement of consent that binds states to the rules of international law. The paper provides an impartiality-based account of enforcement that explains why a state's refusal to give consent to *jus cogens* may be overridden in a consensual legal order. © 2015, Springer Science+Business Media Dordrecht.

PHYSICS

The ALICE Collaboration (2015). Precision measurement of the mass difference between light nuclei and anti-nuclei. *Nature Physics*, 11(10), 811-814.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943198109&partnerID=40&md5=bc565276ff5f2037c7940d1f9cc9720e>.

The measurement of the mass differences for systems bound by the strong force has reached a very high precision with protons and anti-protons. The extension of such measurement from (anti-)baryons to (anti-)nuclei allows one to probe any difference in the interactions between nucleons and anti-nucleons encoded in the (anti-)nuclei masses. This force is a remnant of the underlying strong interaction among quarks and gluons and can be described by effective theories, but cannot yet be directly derived from quantum chromodynamics. Here we report a measurement of the difference between the ratios of the mass and charge of deuterons (d) and anti-deuterons (\bar{d}), and ^3He and $\bar{^3\text{He}}$ nuclei carried out with the ALICE (A Large Ion Collider Experiment) detector in Pb-Pb collisions at a centre-of-mass energy per nucleon pair of 2.76 TeV. Our direct measurement of the mass-over-charge differences confirms CPT invariance to an unprecedented precision in the sector of light nuclei. This fundamental symmetry of nature, which

exchanges particles with anti-particles, implies that all physics laws are the same under the simultaneous reversal of charge(s) (charge conjugation C), reflection of spatial coordinates (parity transformation P) and time inversion (T). © 2015 Macmillan Publishers Limited. All rights reserved.

Kronenbitter, B., Heck, M., Goldenzweig, P., Kuhr, T., Abdesselam, A., Adachi, I., . . . Zupanc, A. (2015). Measurement of the branching fraction of $B^+ \rightarrow \tau + \nu_\tau$ decays with the semileptonic tagging method. *Physical Review D - Particles, Fields, Gravitation and Cosmology*, 92(5).

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943778547&partnerID=40&md5=ab0d196528c1b641a75556e4e1fe2005>.

We report a measurement of the branching fraction of $B^+ \rightarrow \tau + \nu_\tau$ decays using a data sample of $772 \times 10^6 B\bar{B}^-$ pairs, collected at the (4S) resonance with the Belle detector at the KEKB asymmetric-energy e^+e^- collider. We reconstruct the accompanying B meson in a semileptonic decay and detect the recoiling B candidate in the decay channel $B^+ \rightarrow \tau + \nu_\tau$. We obtain a branching fraction of $B(B^+ \rightarrow \tau + \nu_\tau) = [1.25 \pm 0.28(\text{stat.}) \pm 0.27(\text{syst.})] \times 10^{-4}$. This result is in good agreement with previous measurements and the expectation from the calculation based on the Standard Model. © 2015 American Physical Society. © 2015 American Physical Society.

Tamponi, U., Mussa, R., Abdesselam, A., Aihara, H., Arinstein, K., Asner, D. M., . . . Zupanc, A. (2015). First Observation of the Hadronic Transition $\Gamma(4S) \rightarrow \eta_{hb}(1P)$ and New Measurement of the $hb(1P)$ and $\eta_b(1S)$ Parameters. *Physical Review Letters*, 115(14).

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84944128180&partnerID=40&md5=066136dc3a0f0a8169c8632ea306a568>.

Using a sample of $771.6 \times 10^6 \Gamma(4S)$ decays collected by the Belle experiment at the KEKB e^+e^- collider, we observe, for the first time, the transition $\Gamma(4S) \rightarrow \eta_{hb}(1P)$ with the branching fraction $B[\Gamma(4S) \rightarrow \eta_{hb}(1P)] = (2.18 \pm 0.11 \pm 0.18) \times 10^{-3}$ and we measure the $hb(1P)$ mass $M_{hb(1P)} = (9899.3 \pm 0.4 \pm 1.0) \text{ MeV}/c^2$, corresponding to the hyperfine (HF) splitting $\Delta_{MHF}(1P) = (0.6 \pm 0.4 \pm 1.0) \text{ MeV}/c^2$. Using the transition $hb(1P) \rightarrow \gamma \eta_b(1S)$, we measure the $\eta_b(1S)$ mass $M_{\eta_b(1S)} = (9400.7 \pm 1.7 \pm 1.6) \text{ MeV}/c^2$, corresponding to $\Delta_{MHF}(1S) = (59.6 \pm 1.7 \pm 1.6) \text{ MeV}/c^2$, the $\eta_b(1S)$ width $\Gamma_{\eta_b(1S)} = (8.5 \pm 6 \pm 5) \text{ MeV}/c^2$ and the branching fraction $B[hb(1P) \rightarrow \gamma \eta_b(1S)] = (56 \pm 8 \pm 4)\%$. © 2015 American Physical Society.

The ALICE Collaboration (2015). Measurement of charm and beauty production at central rapidity versus charged-particle multiplicity in proton-proton collisions at $\sqrt{s} = 7 \text{ TeV}$. *Journal of High Energy Physics*, 2015(9).

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942886883&partnerID=40&md5=1fed2d7264917f7d1f38a8f8a59cdcbf>.

Prompt D meson and non-prompt J/ψ yields are studied as a function of the multiplicity of charged particles produced in inelastic proton-proton collisions at a centre-of-mass energy of $\sqrt{s} = 7 \text{ TeV}$. The results are reported as a ratio between yields in a given multiplicity interval normalised to the multiplicity-integrated ones (relative yields). They are shown as a function of the multiplicity of charged particles normalised to the average value for inelastic collisions (relative charged-particle multiplicity). D_0 , D^+ and D^{*+} mesons are measured in five p_T intervals from $1 \text{ GeV}/c$ to $20 \text{ GeV}/c$ and for $|y| < 0.5$ via their hadronic decays. The D-meson relative yield is found to increase with increasing charged-particle multiplicity. For events with multiplicity six times higher than the average multiplicity of inelastic collisions, a yield enhancement of a factor about 15 relative to the multiplicity-integrated yield in inelastic collisions is observed. The yield enhancement is independent of transverse momentum within the uncertainties of the measurement. The D_0 -meson relative yield is also measured as a function of the relative multiplicity at forward pseudo-rapidity. The non-prompt J/ψ , i.e. the B hadron, contribution to the inclusive J/ψ

production is measured in the di-electron decay channel at central rapidity. It is evaluated for $p_{T} > 1.3$ GeV/c and $|y| < 0.9$, and extrapolated to $p_{T} > 0$. The fraction of non-prompt J/ψ in the inclusive J/ψ yields shows no dependence on the charged-particle multiplicity at central rapidity. Charm and beauty hadron relative yields exhibit a similar increase with increasing charged-particle multiplicity. The measurements are compared to PYTHIA 8, EPOS 3 and percolation calculations. © 2015, The Author(s).

The ALICE Collaboration (2015). Measurement of jet quenching with semi-inclusive hadron-jet distributions in central Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. *Journal of High Energy Physics*, 2015(9). <http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943167400&partnerID=40&md5=db98fa93dc9d2e75ffbc2db94a845f68>.

We report the measurement of a new observable of jet quenching in central Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV, based on the semi-inclusive rate of charged jets recoiling from a high transverse momentum (high- p_{T}) charged hadron trigger. Jets are measured using collinear-safe jet reconstruction with infrared cutoff for jet constituents of 0.15 GeV, for jet resolution parameters $R = 0.2, 0.4$ and 0.5 . Underlying event background is corrected at the event-ensemble level, without imposing bias on the jet population. Recoil jet spectra are reported in the range $20 < p_{T,jet} < 100$ GeV. Reference distributions for pp collisions at $\sqrt{s} = 2.76$ TeV are calculated using Monte Carlo and NLO pQCD methods, which are validated by comparing with measurements in pp collisions at $\sqrt{s} = 7$ TeV. The recoil jet yield in central Pb-Pb collisions is found to be suppressed relative to that in pp collisions. No significant medium-induced broadening of the intra-jet energy profile is observed within 0.5 radians relative to the recoil jet axis. The angular distribution of the recoil jet yield relative to the trigger axis is found to be similar in central Pb-Pb and pp collisions, with no significant medium-induced acoplanarity observed. Large-angle jet deflection, which may provide a direct probe of the nature of the quasi-particles in hot QCD matter, is explored. © 2015, The Author(s).

The CMS Collaboration (2015). Search for neutral color-octet weak-triplet scalar particles in proton-proton collisions at $\sqrt{s} = 8$ TeV. *Journal of High Energy Physics*, 2015(9).

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84943751990&partnerID=40&md5=88c45b9680c5972e1850ccb6e1856927>.

Abstract: A search for pair production of neutral color-octet weak-triplet scalar particles (Θ_0) is performed in processes where one Θ_0 decays to a pair of b quark jets and the other to a Z boson plus a jet, with the Z boson decaying to a pair of electrons or muons. The search is performed with data collected by the CMS experiment at the CERN LHC corresponding to an integrated luminosity of 19.7 fb⁻¹ of proton-proton collisions at $\sqrt{s} = 8$ TeV. The number of observed events is found to be in agreement with the standard model predictions. The 95% confidence level upper limit on the product of the cross section and branching fraction is obtained as a function of the Θ_0 mass. The 95% confidence level lower bounds on the Θ_0 mass are found to be 623 and 426 GeV, for two different octo-triplet theoretical scenarios. These are the first direct experimental bounds on particles predicted by the octo-triplet model. © 2015, The Author(s).

PSYCHOLOGY

Fuertes, M., Faria, A., Beeghly, M., & Lopes-dos-Santos, P. (2015). The Effects of Parental Sensitivity and Involvement in Caregiving on Mother-Infant and Father-Infant Attachment in a Portuguese Sample. *Journal of Family Psychology*.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942882580&partnerID=40&md5=cd23b1f6e370c40e04a0f97f3fec2a9f>.

In the present longitudinal study, we investigated attachment quality in Portuguese mother-infant and in father-infant dyads, and evaluated whether attachment quality was related to parental sensitivity during parent-infant social interaction or to the amount of time each parent spent with the infant during play and in routine caregiving activities (e.g., feeding, bathing, play). The sample consisted of 82 healthy full-term infants (30 girls, 53 boys, 48 first born), and their mothers and fathers from mostly middle-class households. To assess parental sensitivity, mothers and fathers were independently observed during free play interactions with their infants when infants were 9 and 15 months old. The videotaped interactions were scored by masked coders using the Crittenden's CARE-Index. When infants were 12 and 18 months old, mother-infant and father-infant dyads were videotaped during an adaptation of Ainsworth's Strange Situation. Parents also described their level of involvement in infant caregiving activities using a Portuguese version of the McBride and Mills Parent Responsibility Scale. Mothers were rated as being more sensitive than fathers during parent-infant free play at both 9 and 15 months. There also was a higher prevalence of secure attachment in mother-infant versus father-infant dyads at both 12 and 18 months. Attachment security was predicted by the amount of time mothers and fathers were involved in caregiving and play with the infant, and with parents' behavior during parent-infant free play. (PsycINFO Database Record © 2015 APA, all rights reserved).

POLITICAL SCIENCE

Raleigh, E., & Galster, G. (2015). Neighborhood Disinvestment, Abandonment, And Crime Dynamics. *Journal of Urban Affairs*, 37(4), 367-396.

<http://proxy.lib.wayne.edu/login?url=http://www.scopus.com/inward/record.url?eid=2-s2.0-84942819510&partnerID=40&md5=32b2d63cd6e6d19ae0ba37cbf4a32b25>.

This article develops a conceptual framework of neighborhood crime dynamics based on a synthesis of criminology and neighborhood change literatures which suggests that neighborhood decline can produce a nonlinear response in crime rates. The authors probe this relationship using a rich Detroit data set containing detailed, block-level information about housing, land, abandonment, population, schools, liquor outlets, and crime reports of various categories. Negative binomial models reveal that several neighborhood attributes are consistently associated with all types of crime (renter occupancy, population density, establishments with liquor licenses) while other attributes are only associated with particular types of crime. A simulation using estimated parameters suggests that processes of disinvestment and abandonment can generate a nonlinear pattern in the rate of growth in neighborhood crimes that vary in intensity by crime type. The authors explore the implications of their findings for anticrime strategies focusing on demolishing abandoned housing, "right-sizing" urban footprints, and regulating liquor-selling establishments. © 2015 Urban Affairs Association.