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ABSTRACT BOOK

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Hannah Arendt and Martin Heidegger: On *Home Faber*, Technology and Work of Art

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Abstract

In *The Human Condition*, Arendt distinguishes between the activities of labor and work. In her opinion, the former is connected with the body, with biological processes and natural processes that are independent of our will. The latter is connected with technical skill, production and the unchanging world of objects created by man. Arendt notes that, unlike the animal laborans, which is bodily tied to the material of its labor and absorbs it, homo faber processes this material through production, creating the many objects that compose and sustain the human world. According to Arendt, these objects are not consumed but used. These objects give the human-made world its durability and permanence. Without them, mortal human beings could not establish themselves on earth. Therefore, homo faber creates the world and gives solidity even to the most delicate objects in the universe.

Although the power of production is capable of creating the human world, under homo faber, Arendt writes, this world still turns out to be "devoid of value," just like the material for use, which is only a means to an end. Thus, homo faber, who knows only his own ends, uses not only the objects he produces but also the entire world and nature as means. It echoes with Heidegger's claim that endless consumption, whose goal is maximum use, is a unique process in the history of the world, one in which the world itself no longer exists. Likewise, in his "Memorial Address", Heidegger argues that "nature has now been transformed into a gigantic gas station, a source of energy for modern technology and production". According to him, the understanding of technology and its confrontation can only take place in a sphere that, on the one hand, is close to the essence of technology, but on the other hand, is completely different from it. For Heidegger, "such a sphere is art." He defines art as "the opposing force of technology": "If technology is the destructive force that turns man into an object, even though he tries to dominate him, art is the "saving force." In his 1950 essay "The Origin of the Work of Art," Heidegger argues that work of art "opens up the being of beings."

If, for Heidegger, a work of art is valuable because it reveals the truth of Being, then for Arendt, the value of art lies in its extraordinary durability: it is the most enduring of all worldly things. Arendt argues that work of art differs from other objects not only in their longevity but also in their quality; their permanence is such that they can coexist with a changing world for centuries. She emphasizes that the immediate source of artistic creation is the human faculty of thinking, which manifests itself most fully in true philosophy and is distinct from the cognitive processes that underpin scientific inquiry. In What is Called Thinking? (1952), Heidegger writes that "science does not think." According to him, science does not think in the way a thinker thinks. In his late writings Heidegger "distinguishes thought as Gelassenheit … from

technical interest." According to him, Gelassenheit "… means to exist in the (technological) world and not to belong to it, to be in it with the body and not with the soul…" Gelassenheit, for Heidegger, is that which can cope with the destructive power of technology.

Thus, my conference paper is connected to Arendt's analysis of homo faber and the activity of work, as presented in her 1958 book *The Human Condition*. It also engages with late Heidegger's critique of modern technology. Moreover, I will focus on Arendt's and Heidegger's conceptions of the artwork and its relation to thinking, which, for both, is the foundation of work of art.

Keywords: Arendt, Heidegger, work of art, thechnology, thinking

The Relationship Between Foreign Direct Investment, Trade Openness, Economic Growth, and CO_2 Emissions in Türkiye: An Empirical Analysis for the Period 1979–2022

Türkiye'de Doğrudan Yabancı Yatırımlar, Ticari Açıklık, Ekonomik Büyüme ve CO_2 Emisyonu Arasındaki İlişki: 1979–2022 Dönemi Ampirik Bir Analiz

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Abstract

This study investigates the effects of foreign direct investment, trade openness and economic growth on Carbon Dioxide (CO_2) emissions in Türkiye. In this context, using annual time series data for the period 1979-2022 from the World Bank database, the analysis was carried out with the Autoregressive Distributed Lag (ARDL) bounds test approach. In the study, CO_2 emission was used as the dependent variable and foreign direct investment, trade openness and economic growth were used as independent variables. The stationarity levels of the variables were tested by Augmented Dickey-Fuller and Phillips-Perron unit root tests. The main results of the study are as follows: (1) There is a long-run relationship between CO_2 emissions and foreign direct investments, trade openness and economic growth. (2) 1% increases in economic growth, foreign direct investments and trade openness increase CO_2 emissions by 0.34%, 0.06% and 0.18%, respectively. (3) When the short-run model is analysed, the coefficient of the error correction term (-0.601283) is statistically significant. This indicates that the effect of the shock in the short run will be dampened in approximately 1.66 years and will reach equilibrium in the long run. (4) Finally, when the diagnostic test results of the model and the graphs of CUSUM and CUSUMSQ tests are analysed, it is concluded that the model is stable.

Keywords: CO_2 Emissions, Foreign Direct Investment, Trade Openness, Economic Growth, ARDL

Özet

Bu çalışmada, Türkiye'de doğrudan yabancı yatırımlar, ticari açıklık ve ekonomik büyümenin Karbondioksit (CO_2) emisyonları üzerindeki etkileri araştırılmaktadır. Bu bağlamda, Dünya Bankası veri tabanından alınan 1979–2022 dönemine ait yıllık zaman serisi verileri kullanılarak, Gecikmesi Dağıtılmış Otoregresif (ARDL) sınır testi yaklaşımı ile analiz gerçekleştirilmiştir. Çalışmada bağımlı değişken olarak CO_2 emisyonu, bağımsız değişken olarak ise doğrudan yabancı yatırımlar, ticari açıklık ve ekonomik büyüme kullanılmıştır. Değişkenlerin durağanlık mertebeleri, Augmented Dickey-Fuller ve Phillips-Perron birim kök testleri ile sınanmıştır. Çalışmanın temel sonuçları şunlardır: (1) CO_2 emisyonları ile doğrudan yabancı yatırımlar, ticari açıklık ve ekonomik büyüme arasında uzun dönemli bir ilişki vardır. (2) Ekonomik büyümedeki, doğrudan yabancı yatırımlardaki ve ticari açıklıktaki %1'lik artışlar CO2 emisyonunu sırasıyla, %0.34, %0.06 ve %0.18 oranında artırmaktadır. (3)

Kısa dönem modeli incelendiğinde, hata düzeltme terimi katsayısı (-0.601283) istatistiksel olarak anlamlıdır. Bu durum, kısa dönemde meydana gelen şokun etkisinin, yaklaşık 1,66 yıl içinde sönümlenerek uzun dönemde dengeye geleceğini göstermektedir. (4) Son olarak, modelin tanısal test sonuçları, CUSUM ve CUSUMSQ testlerine ait grafikler incelendiğinde, modelin istikrarlı olduğu sonucuna varılmıştır.

Anahtar Kelimeler: CO_2 Emisyonu, Doğrudan Yabancı Yatırımlar, Ticari Açıklık, Ekonomik Büyüme, ARDL

Red Ink And Red Tape: Local Government Debt Limits and Paper-Based GDP Management

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Abstract

Regional GDP data not only reflects regional economic conditions, but also serves as the basis for national development policies. The main source of its inaccuracy is the local government partly based on paper management and management based on real activities. This study investigates the influencing factors of GDP management errors by observing local government debt close to the limit and paper GDP management errors. Using the panel data of 31 provinces in China from 2015 to 2022, this study finds that when the local government debt is close to the limit, the GDP management error caused by the paper-based GDP management will increase, and this phenomenon is more pronounced in the regions with high government promotion incentives and low marketization degree. The channel test finds that there is a trade-off between real activity-based management and paper management.The robustness tests include replacing the core explanatory variables、explained variables and DID of policy shocks. This paper provides a new macro perspective for the study of local government debt, and improves the existing research on GDP management errors from the perspective of paper-based GDP management and real activity-based GDP management. From the perspective of practical impact, this paper provides a factual basis for local government incentives, regulatory policies and the promotion of local government debt reform.

Keywords: GDP management local government debt local government debt ceilings paper-based management

Refugees as a Specific Example of Minority Groups in a State

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Abstract

In recent years, migration in Europe has dominated social and political discourse, driven by mass movements of people fleeing conflict, political persecution and natural disasters, as well as the rise of populist rhetoric fuelled by latent economic tensions. Displacement is undoubtedly one of the biggest challenges facing the world today. At the end of 2020, more than 82 million people worldwide are classified as forcibly displaced, whether they have remained in their countries of origin or crossed an international border. If this group were a country, it would rank 20th in the world in terms of population, just after Germany. To date, many tools and solutions have also been developed to improve the daily practice of migration management, which can have a tangible impact on migrants' lives and social cohesion. The aim of this article will be to show the existing legal gaps when it comes to meeting the needs of refugees, thus demonstrating the thesis that there are numerous practical discrepancies between UN principles and actual practices.

Keywords: Refugees, UN, movement, challenges, Europe

Neolithic Monuments of Nakhchivan in The Light of New Research

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Abstract

The advantageous geopolitical position of the Nakhchivan region of Azerbaijan determines the relevance of the monuments here in the study of ancient intercultural relations formed in the triangle of the South Caucasus - Eastern Anatolia - the Middle East.

The main goal of the presented article is to consider the origin of agricultural cultures formed in the South Caucasus, using the example of the monuments of Nakhchivan, and at the same time to introduce new finds related to the Neolithic period into scientific circulation.

The study is based on archaeological materials from 5 monuments (I Kultepe, Nakhchivantepe-4, Osmantepe, Sadarak, I Khalaj) on the territory of the Nakhchivan Autonomous Republic. Among these monuments, new finds from the settlement of I Khalaj are presented to the scientific community for the first time. The monument is located in the village of Khalaj in the Sharur district, on the left bank of the Araz River, in the geography that connects the South Caucasus with the Urmia basin. Here, researchers have recorded Neolithic ceramics. They were represented mainly by painted patterns and were associated with Middle Eastern cultures.

During the archaeological research we conducted here in 2024, new finds from the Neolithic period were obtained[1]. In order to determine the existence of the layer to which they belong, archaeological excavations were carried out at the monument in June-July of the same year. As a result of the excavations, which continued to a depth of 4.2 meters, 5 cultural layers were recorded. Neolithic ceramics are mainly represented by above-ground finds. They are divided into 3 types: simple, red-engobed and both-surface polished ceramics. Two of them reflect more local pottery traditions. Red-engobed ceramics and a small amount of painted ceramics create an analogy with Middle Eastern cultures.

Conclusion. The study of new finds from Khaladj I shows that local pottery traditions developed here during the Late Ceramic Neolithic, and that cultural and economic links with Near Eastern cultures existed at the same time.

Keywords: Neolithic, Nakhchivan, cultural relations, I Khalaj settlement.

[1] Archaeological research at the monument was conducted in 2024 by the "Khalaj Archaeological Expedition" organized by the Nakhchivan Department of ANAS under the leadership of Associate Professor Zeynab Guliyeva.

Co-creating Reputation. Redefining Public Relations Strategies in the Digital Era

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Abstract

The digital transformations of the last two decades have profoundly redefined public relations (PR) practices, shifting the focus from one-way control of communication to a collaborative and dynamic model. This research explores how social networks, artificial intelligence and active user participation (User-Generated Content) have transformed the relationships between organizations and their audiences. The study examines the transition from traditional models of communication - based on broadcasting and control - to a paradigm of constant dialog, where reputation is co-created in real time. New practices such as transmedia storytelling, the use of data to personalize messages, real-time monitoring of public sentiment and digital crisis management are highlighted. Research also discusses the risks associated with this shift, such as loss of narrative control, information manipulation or content overload. Special attention is paid to the role of digital influencers in PR strategies and the impact of communication automation on message authenticity. Through a mixed-methodology, the paper provides a current and critical perspective on PR adaptation in the age of hyperconnectivity, with a focus on the strategic and ethical challenges generated by this new communication ecosystem. The conclusions highlight the need for flexibility, transparency and digital literacy in rebuilding trust between organizations and the public.

Keywords: PR, image, digital era, communication, reputation

European Call Option Valuation Using the Monte Carlo Simulation Method Without And With Antithetic Variables

Evaluation Des Options D'achat Européennes A L'aide De La Méthode De Simulation De Monte-Carlo Sans Et Avec Variables Antithetiques

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Abstract

The work of Itô, who developed a mathematical theory for modeling continuous stochastic processes, was used by Black & Scholes to develop an equation relating the value of the option to its determinants, which include the value of the underlying asset, volatility, strike price, risk-free interest rate, and maturity. In this study, we evaluate this type of option using the Monte Carlo simulation technique with antithetical variables. We also use the theoretical value obtained by the Black & Scholes model as a reference to test the effectiveness of this type of method in calculating the European call option.

Keywords: Call option, stake, risk-neutral reasoning, Black-Scholes, confidence interval, central limit theorem.

Résumé

Les travaux d'Itô, qui a développé une théorie mathématique pour la modélisation des processus stochastiques continus, ont été utilisés par Black & Scholes pour développé une équation mettant en relation la valeur de l'option avec ses déterminants qui sont notamment la valeur du sous –jacent, la volatilité, le prix d'exercice, le taux d'intérêt sans risque et la maturité. Dans cette étude, nous évaluons ce type d'options à l'aide de simulations de Monte Carlo sans et avec des variables antithétiques. Nous prenons également la valeur théorique obtenue par le modèle Black & Scholes comme référence pour tester l'efficacité de ce type de méthode dans le calcul de l'option d'achat européenne.

Mots-clés: Option d'achat, action, raisonnement risque neutre, Black-Scholes, intervalle de confiance, théorème centrale limite.

The Contribution of Football Academies to Sports Tourism

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Abstract

This paper investigates the contribution of football academies to sports tourism, focusing on their role as drivers of development and enhancers of the local and regional economy. Sports tourism is a rapidly growing sector of modern tourism, combining engagement in sports with travel experiences and cultural interaction. Within this context, football academies especially those with organized structures and connections to professional clubs, play a multifaceted role. It presents ways in which academies contribute directly and indirectly to tourism: through organizing football tournaments, summer and winter camps, exchanges with foreign teams, participation in international events, and hosting athletes and their families. At the same time, local entrepreneurship is boosted, and sports and tourism infrastructure is upgraded. Reference is also made to examples of Greek regions that have leveraged sports as a catalyst for tourism development, as well as to international practices from countries like Turkey, which has significantly invested in sports facilities and hosts numerous academies and tournaments, attracting athletes from the Middle East, the Balkans, and Central Europe. The paper concludes that systematic support and strengthening of football academies can positively contribute both to the enhancement of sports and to the economic and social empowerment of local communities.

Keywords: Football academies, Sports tourism, Tourism policy, Sports infrastructure, International sports partnerships

Analyzing the Effects of European Union Accession Process on Good Governance in Türkiye (2002-2013)

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Abstract

The European Union (EU) accession process has been one of the primary external driving forces behind governance reforms in Türkiye. Democratization and institutional strengthening gained momentum between 2002 and 2005. However, as accession talks stalled from 2005 to 2013, progress in Türkiye-EU relations weakened, reducing the EU's influence on good governance reforms. There is a need to explore how external political obligations impact domestic governance. By analyzing governance indicators—such as rule of law, transparency, and accountability—across different phases of Türkiye-EU relations, this study assesses whether early EU-driven reforms led to long-term development or short-term adjustments. EU accession reforms between 2002 and 2005 resulted in increased judicial independence, enhanced civil liberties, and improved governance institutions. In contrast, the period between 2005 and 2013 showed stagnation in reform efforts and a decline in momentum. Drawing on EU progress reports, World Bank governance indicators, and official documents, this thesis conducts a comparative analysis of the EU accession process's impact on Türkiye's governance. Findings suggest that EU-driven reforms were impactful in the short term but failed to become institutionalized. As Türkiye's political landscape evolved and EU influence declined, reform efforts gradually weakened.

Keywords: Good Governance, EU Accession Process of Türkiye, Political Reforms, Türkiye, European Union (EU)

The Emotional And Polarizing Effect of The Language of Political Discourse on Social Media Platforms: An Analysıs on The 2023 Elections

Sosyal Medya Platformlarındaki Siyasal Söylem Dilinin Duygusal ve Kutuplaştırıcı Etkisi 2023 Seçimleri Üzerine İnceleme

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Abstract

This paper will examine the emotional and polarizing effect of the language of political discourse on social media platforms and the 2023 elections. The interaction of emotions and thoughts between people is called communication. Since the history of the first age, people have needed to live in a certain order and have made changes in order to ensure social order in the process. This process of changes leads us to the concept of politics. Politics is a word of Arabic origin and comes from the same root as the word groom, meaning horse training. Politics can be explained as the efforts of individuals or institutions to impose their ideas and opinions on social issues on the society. Social media offers people the opportunity to communicate and interact without time and space limits. Today, politics in social media, which can be characterized as a new public sphere, has an impact on people. Social media applications, which are constantly developing and the number of users is rapidly increasing, have become one of the most effective areas where political communication is used. Politics has become digital and is carried out through these applications. The discourses used by politicians during election processes affect the attitudes and thoughts of voters. In this study, the language of political discourse used in social media applications will be examined in terms of emotionality and polarizing effects. By analyzing political content, the emotional tone and polarizing effects of political discourse will be evaluated. The findings of the research aim to emphasize the importance of ethical and responsible language use in political communication by revealing the effects of the language used in social media on society during the election process. In the conclusion, recommendations are given on communication strategies and social media practices to reduce political polarization.

Keywords: Politics, Political Communication, Social Media.

Özet

Sosyal medya platformlarındaki siyasal söylem dilinin duygusal ve kutuplaştırıcı etkisi ve 2023 seçimleri üzerine inceleme yapılarak bu bildiride kullanılan dilin duygusal ve kutuplaştırıcı etkisi üzerine incelemeler yapılacaktır. İnsanlar arasındaki duygu ve düşünce etkileşimine iletişim adı verilir. İlk çağ tarihinden itibaren insanlar belirli bir düzen içerisinde yaşama ihtiyacı duymuşlar ve süreç içerisinde toplumsal düzenin sağlanabilmesi için değişimler

gerçekleştirmişlerdir. Bu değişimler süreci bizi siyaset kavramına yönlendirir. Siyaset arapça kökenli bir kelime olup, at eğitimi anlamına gelerek seyis kelimesi ile aynı kökten gelir. Siyaset kişi veya kurumların toplumsal konularda fikir ve görüşlerini topluma kabul ettirme çalışmaları olarak açıklanabilir. Sosyal medya insanlara zaman ve mekan sınırı olmadan iletişim ve etkileşim imkanı sunmaktadır. Günümüzde yeni bir kamusal alan olarak nitelendirilebilen sosyal medyada siyaset insanlar üzerinde etkisini göstermektedir. Sürekli gelişen ve kullanıcı sayısı hızla artan sosyal medya uygulamaları siyasal iletişimin kullanıldığı en etkin alanlardan biri haline gelmiştir. Siyaset dijital bir hal alıp bu uygulamalar aracılığıyla yürütülmektedir. Seçim süreçlerinde siyasiler tarafından kullanılan söylemler seçmenlerin tutumunu ve düşüncelerini etkilemektedir. Çalışmada sosyal medya uygulamalarında kullanılan siyasi söylem dili, duygusallık ve kutuplaştırma etkileri açısından incelenecektir. Siyasal içerikler incelenerek, siyasal söylemin duygusal tonu ve kutuplaştırıcı etkilerinin değerlendirilmesi yapılacaktır. Araştırma bulguları seçim sürecindeki sosyal medyada kullanılan dilin toplum üzerinde yarattığı etkileri ortaya çıkararak, etik ve sorumlu dil kullanımının siyasal iletişimdeki önemi üstünde durmayı amaçlamaktadır. Sonuç kısmında siyasal kutuplaşmayı azaltmaya yönelik iletişim stratejileri ve sosyal medya uygulamaları üstüne öneriler verilmiştir.

Anahtar Kelimeler: Siyaset, Siyasal İletişim, Sosyal Medya.

Assessment of Blockchain Technology in Saadu Zungur University, Gadau Bauchi State

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Abstract

This study explores the potential and readiness for the adoption of blockchain technology in the library system of Sa'adu Zungur University, Gadau, Bauchi State. As academic libraries face increasing demands for transparency, secure data management, and efficient resource sharing, blockchain offers promising solutions through its decentralized, immutable, and tamper-proof architecture. The research assesses the level of awareness among library staff and users, evaluates existing digital infrastructure, and identifies possible applications such as digital rights management, secure lending systems, decentralized cataloging, and improved access to academic resources. Data were collected using questionnaires,with analysis highlighting gaps in knowledge and infrastructure but strong interest in innovation. The study concludes that while current implementation is minimal, blockchain holds significant promise for enhancing library operations. It recommends targeted training, infrastructural upgrades, and policy development to enable a gradual integration of blockchain-based systems in the university library.

Keywords: Assessment, Blockchain, Technology and Saadu Zungur Uni.

Cultural Representation in Wedding Photographs: A Semiotical Analysis

Düğün Fotoğraflarında Kültürel Temsil: Göstergebilimsel Bir İnceleme

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Abstract

This study aims to reveal the cultural meanings embedded in wedding photographs taken in different periods in Turkey through a semiotic analysis. Wedding rituals serve as significant cultural narratives in which societal values, beliefs, and norms are visually represented. Using the semiotic method, the study analyzes the denotative and connotative meanings of signs such as clothing, posture, setting, and accessories in wedding photographs. Based on Roland Barthes' theory of denotation and connotation, the research interprets how visual signs reflect transformations in gender roles, aesthetic preferences, and cultural norms. In this regard, the study contributes to the field of communication by exploring the relationship between media, culture, and visual representation.

Keywords: Semiotics, wedding photography, cultural representation, gender roles, media, visual

Özet

Bu çalışma, Türkiye'de farklı dönemlerde çekilmiş düğün fotoğraflarını gösterge bilimsel yöntemle analiz ederek bu görsellerin kültürel anlamlarını ortaya koymayı amaçlamaktadır. Düğün ritüelleri, toplumsal değerlerin, inançların ve normların görsel olarak temsil edildiği önemli kültürel anlatılardır. Göstergebilimsel çözümleme yöntemiyle, düğün fotoğraflarında yer alan giysi, poz, mekân ve aksesuar gibi göstergelerin hem bireysel hem toplumsal düzeyde taşıdığı anlamlar incelenmiştir. Roland Barthes'ın düz anlam (denotasyon) ve yan anlam (konotasyon) ayrımı temel alınarak yapılan analizde; toplumsal cinsiyet rolleri, estetik anlayış ve kültürel normlardaki dönüşümler yorumlanmıştır. Bu yönüyle araştırma, medya, kültür ve görsel temsil ilişkisini inceleyerek iletişim bilimleri literatürüne katkı sağlamaktadır.

Anahtar Kelimeler: Göstergebilim, düğün fotoğrafçılığı, kültürel temsil, toplumsal cinsiyet, medya, görsel kültür, Barthes

A Theory of The Thermoconductivity of Matter and Materials

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Abstract

As far as criminological research is concerned, the Republic of Moldova is currently in the highest rank in the world, alongside other countries, because great criminological discoveries have been made here. As far as criminological education is concerned, the Republic of Moldova ranks second in the world, having a university criminological specialization (Criminology and Criminal Sciences, bachelor's degree, and others at master's and doctoral level), higher criminological education establishments and various criminology textbooks (general criminology, special criminology, methodology of criminological research and analysis). The criminological practice has been continuously weakened since the establishment of the Republic of Moldova until now.

Keywords: Thermoconductivity, thermoconductivity of materials, construction, clothes

Poetry and Death: A Requiem for Lost Meaning in the Shadow of Totalitarianism

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Abstract

The themes of death and spiritual desolation in the dissident poetry of the 1970s are essential to understanding the intellectual climate of the era. This study connects the works of Jiří Kuběna, Zbyněk Hejda, and Petr Kabeš with Jan Patočka's concept of the "solidarity of the shaken." At the same time, it draws a parallel to Czech fin-de-siècle decadent literature – especially the aesthetics of egotism, revolt, and disgust as cultivated by the journal Moderní revue. In both periods, poetry functions as a metaphysical space where confrontation with mortality becomes an existential gesture of resistance: against bourgeois conformity at the turn of the century, and against the regime's nihilism under late socialism.

Keywords: dissident poetry, totalitarianism, solidarity of the shaken, Jan Patočka, decadence, the Modern Revue

The Role of the Mosul University in Preserving the Civilizational Heritage of Nineveh

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Abstract

The University of Mosul is a leading academic institution that plays a pivotal role in supporting and advancing both the local and national community through its diverse scientific and academic specializations. One of its most notable contributions lies in the preservation of the rich cultural and civilizational heritage that distinguishes Iraq as a whole, and particularly the province of Nineveh. This is achieved through a range of academic and practical initiatives spanning educational, field, consultative, cooperative, social, and administrative dimensions.

Through its qualified human resources and the outputs of its College of Archaeology—which has become a key actor in managing archaeological affairs in the city—the university actively contributes to the rehabilitation and management of damaged archaeological and heritage sites. In addition, it provides technical and consultative support to archaeological departments and excavation missions operating within Nineveh Province.

This study aims to shed light on the multiple roles undertaken by the University of Mosul in safeguarding the cultural and civilizational heritage of Mosul, with particular emphasis on its academic, practical, and consultative functions. It also explores ways to further strengthen these efforts in order to support sustainable development and foster community peace through the protection of local cultural identity.

Keywords: Mosul University, Cultural Heritage, Iraq, Archaeology, Nineveh

Investigation of the Relationship Between University Students' E-sports Attitudes, Digital Leisure Flow Experiences and Subjective Vitality

Üniversite Öğrencilerinin E-spor Tutumları, Dijital Serbest Zaman Akış Deneyimleri ve Öznel Zindelikleri Arasındaki İlişkinin İncelenmesi

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Abstract

The aim of this research is to examine university students' e-sports attitudes, digital leisure flow experiences and subjective vitality according to some variables and to reveal the relationship between them. The research group consists of 510 university students. In the research "E-Sports Attitudes Scale-ESAS", "Digital Leisure Flow Experiences Scale-DL-FES" ve "Subjective Vitality Scale-SVS" were used as data collection tools. As a statistical method in the analysis of data, descriptive statistics, t-test, ANOVA and correlation tests were used. The students ESAS and sub-dimension score, DL-FES time sub-dimension and subjective vitality scores differed according to gender. ESAS and sub-dimension scores and DL-FES and sub-dimension scores significantly differed according to class level and daily game playing time. ESAS and sub-dimension scores and DL-FES and time sub-dimension scores differed according to the daily internet duration variable. While e-sports participants are high ESAS and DL-FES total and sub-dimension scores and subjective vitality, university students who active sports ESAS and sub-dimension scores, DL-FES and time sub-dimension score and subjective vitality are high. There was a positive and medium level correlation between the ESAS and DL-FES, in contrast to a positive and low level correlation between the ESAS and SVS. On the other hand, positive and medium level relationship was observed DL-FES and SVS.

Keywords: E-sports attitudes, flow experiences, digital leisure, subjective vitality

Özet

Bu araştırmanın amacı, üniversite öğrencilerinin e-spor tutumları, dijital serbest zaman akış deneyimleri ve öznel zindeliklerini bazı değişkenlere göre incelemek ve değişkenler arasındaki ilişkiyi ortaya koymaktır. Araştırmaya 510 üniversite öğrencisi katılmıştır. Çalışmada veri toplama aracı olarak "E-Spor Tutum Ölçeği-ESTÖ", "Dijital Serbest Zaman Akış Deneyimi Ölçeği-DSZ-ADÖ" ve "Öznel Zindelik Ölçeği-ÖZÖ" kullanılmıştır. Verilerin analizinde istatistiki yöntem olarak; betimsel istatistikler, t-testi, ANOVA ve korelasyon testleri kullanılmıştır. Cinsiyet değişkenine göre katılımcıların ESTÖ ve alt boyut puanları, DSZ-ADÖ zaman alt boyutu

ve öznel zindelik puanlarının farklılaştığı tespit edilmiştir. Sınıf ve günlük oyun oynama süresi değişkenine göre ESTÖ ve alt boyut puanları ile DSZ-ADÖ ve alt boyut puanları anlamlı bir şekilde farklılaşmaktadır. Günlük kullanılan internet süresi değişkenine göre ESTÖ ve alt boyut puanları ile DSZ-ADÖ ve zaman alt boyutu puanları anlamlı bir şekilde farklılık göstermektedir. E-spor yapan katılımcıların ESTÖ ve DSZ-ADÖ toplam ve alt boyut puanları ile öznel zindelikleri daha yüksektir. Aktif spor yapan üniversite öğrencilerinin ESTÖ ve alt boyut puanları, DSZ-ADÖ ve zaman alt boyut puanı ile öznel zindelikleri daha yüksektir. ESTÖ ile DSZ-ADÖ arasında pozitif yönde ve orta düzeyde; ESTÖ ile ÖZÖ arasında pozitif yönde ve düşük düzeyde; DSZ-ADÖ ile ÖZÖ arasında ise pozitif yönde ve orta düzeyde anlamlı bir ilişki olduğu görülmüştür.

Anahtar Kelimeler: E-spor tutumu, akış deneyimi, dijital serbest zaman, öznel zindelik

Tayfun Pirselimoğlu's Cinema in the Contrast of National and Modern Allegory

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Abstract

In a cinematic narrative, the concept of allegory can be read through different components and analyzed with an interdisciplinary approach. In this study, the concept of 'National allegory' by Fredric Jameson and the concept of 'modern allegory' developed by Paul de Man, Walter Benjamin and Franco Moretti will be analyzed comparatively by considering allegorical narrative in a semiotic framework. The main purpose of the research is to discuss the views of Paul de Man, Walter Benjamin and Franco Moretti, who argue against Jameson's approach that Third World texts necessarily have an allegorical structure and that this structure carries social and political meanings, and to discuss the views of Paul de Man, Walter Benjamin and Franco Moretti, who oppose this necessity and position modern allegory as a method of analysis in understanding individual and social alienation. In line with this discussion, the analysis will focus on how allegorical narration is shaped through themes such as the concept of crime and criminality, the search for justice, resentment, fatalism, traditionalism, dreams, criticism of bureaucracy, social morality, and political criticism, and how the films are positioned against national and modern allegorical readings. By analyzing the superficially apparent meanings of allegorical signs set in the countryside or town, it is important to understand the effect of communication mechanisms through a cinematic actant and to perform a reading. In this context, the films to be discussed are ideal examples for an in-depth examination of this relationship between social impact and cinematic narrative. From this point of view, the universe of this study, in which we aim to understand and discuss how the concept of allegory is handled in the opposition of national and modern allegory from a semiotic perspective, is the cinema of Tayfun Pirselimoğlu; the productions of Tayfun Pirselimoğlu as a screenwriter/director constitute the sample. The films 'Yol Kenarı' (2017) and 'Kerr' (2021) are the research objects of this study, which will make it possible to discuss the construction and representation under consideration from a relevant perspective.

Keywords: Cinema, Allegory, National and Modern Allegory, Tayfun Pirselimoğlu's Cinema

Özet

Sinemasal bir anlatıda, alegori kavramı farklı bileşenler üzerinden okunabilir ve disiplinlerarası bir yaklaşımla analiz edilebilir. Bu çalışmada, alegorik anlatıyı göstergebilimsel bir çerçevede ele alarak, Fredric Jameson'ın "ulusal alegori" kavramsalı ile Paul de Man, Walter Benjamin ve Franco Moretti'nin geliştirdiği "modern alegori" anlayışı karşılaştırmalı olarak incelenecektir. Çalışmanın temel amacı, Jameson'ın Üçüncü Dünya metinlerinin zorunlu olarak alegorik bir yapıya sahip olduğunu ve bu yapının toplumsal ve siyasi anlamlar taşıdığını öne süren yaklaşımına karşı, Paul de Man, Walter Benjamin ve Franco Moretti'nin bu zorunluluğa karşı çıkarak modern alegoriyi bireysel ve toplumsal yabancılaşmayı anlamada bir analiz

yöntemi olarak konumlandıran görüşlerini tartışmaktır. Bu tartışma doğrultusunda, Tayfun Pirselimoğlu'nun ele aldığı suç ve suçlu kavramı, adalet arayışı, hınç, kadercilik, gelenekçilik, rüyalar, bürokrasi eleştirisi, toplumsal ahlak ve siyasi eleştiri gibi temalar üzerinden alegorik anlatımın nasıl biçimlendirildiği ve filmlerin ulusal veya modern alegoriye dayalı okumalar karşısında nasıl konumlandırıldığı analiz edilecektir. Taşra veya kasabada geçen alegorik göstergelerin yüzeysel olarak görünen anlamlarını analiz ederek bir sinematik eyleyen üzerinden iletişim mekanizmalarının etkisini anlamak ve bir okuma gerçekleştirmek önem taşımaktadır. Bu bağlamda, ele alınacak olan filmler, toplumsal etki ve sinemasal anlatı arasındaki bu ilişkiyi derinlemesine incelemek için ideal birer örnektir. Buradan hareketle, alegori kavramının ulusal ve modern alegori karşıtlığında nasıl ele alındığını göstergebilimsel bir bakış açısıyla anlamayı ve tartışmayı amaçladığımız bu çalışmanın evrenini Tayfun Pirselimoğlu sineması; bir senarist/yönetmen olarak Tayfun Pirselimoğlu'nun üretimleri ise örneklemini oluşturmaktadır. Ele alınan inşayı ve temsili, ilgili bakışla tartışmayı mümkün kılacak olan *"Yol Kenarı"* (2017) ve *"Kerr"* (2021) filmleri bu çalışmanın araştırma nesneleri konumundadır.

Anahtar Kelimeler: Sinema, Alegori, Ulusal ve Modern Alegori, Tayfun Pirselimoğlu

New Technologies and Terrorist Organizations: The Experience and Challenges of the Albanian Government in Fighting Terrorism

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Abstract

This paper aims to examine the development and evolution of terrorist organizations in the light of the development of new technologies in Albania. With the development of new technologies, the nature of terrorism has been transformed through the use of new technologies and techniques by terrorist groups. Due to this evolution, the fight against this phenomenon has become increasingly complicated and sophisticated. The study is based on a review of existing literature on the development of terrorist organizations and the relationship with new technologies, with a specific reference to the role of the Albanian government in fighting international terrorism. This paper argues that although the use of intelligence and technology has offered new opportunities for preventing terrorist attacks, Albania continues to face new hybrid threats. In this context, Albania should orient its policy towards strengthening international cooperation and using coordinated strategies.

Keywords: terrorism, hybrid threats, security, Albania, new technologies

"The Terror of the Beautiful": TikTok Aesthetics and the Performance Regime of the Youth Body

Güzelin Terörü": TikTok Estetiği ve Genç Bedenin Performans Rejimi

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Abstract

This study analyzes the visibility strategies of young TikTok users through the lens of Byung-Chul Han's concept of *kalocracy*—the rule of beauty. On TikTok, content creation is no longer limited to creativity or entertainment; it has transformed into a struggle to conform to aesthetic norms, body politics, and algorithmic regimes of visibility. Filters, body presentation styles, and performative elements such as dancing are not only acts of expression, but also attempts to generate value within a platform-driven beauty economy.

The research focuses on TikTok content produced by users aged 15 to 25, employing qualitative discourse and visual analysis. Findings indicate that young users optimize their bodily appearances according to digital aesthetic standards, aiming to achieve both social acceptance and algorithmic rewards. In this context, the body functions as a form of capital, and visibility becomes a new labor regime based on performance. TikTok emerges as a digital space where "the beautiful" becomes a mechanism of control, transforming aesthetics into a force that excludes ethical and political dimensions of self-expression.

Ultimately, the study reveals how TikTok aestheticizes the body into a site of performative labor, reinforcing neoliberal norms of optimization, exposure, and algorithmic conformity.

Keywords: Kalocracy, TikTok aesthetics, Body politics, Social media, Digital performance

Özet

Bu çalışma, Byung-Chul Han'ın *kalokrasi* (güzellik iktidarı) kavramı üzerinden TikTok platformunda genç kullanıcıların görünürlük stratejilerini analiz etmektedir. TikTok'ta içerik üretimi, yalnızca eğlence ya da yaratıcılık değil; aynı zamanda estetik normlara, beden politikalarına ve algoritmik görünürlük rejimlerine uyum sağlama mücadelesine dönüşmüştür. Özellikle genç bireylerin kullandığı filtreler, bedenlerini sergileme biçimleri ve dans gibi performatif öğeler, platformun dayattığı "güzellik estetiği"ne boyun eğmekle kalmayıp, aynı zamanda bu estetik içinde değer üretme çabasını da ortaya koymaktadır.

Çalışmada 15–25 yaş arası TikTok kullanıcılarının içerikleri niteliksel söylem ve görsel analiz yoluyla incelenmiştir. Bulgular, genç kullanıcıların dijital estetik normlara göre şekillendirdikleri bedenlerini, hem toplumsal kabul hem de algoritmik

ödüller için optimize ettiklerini göstermektedir. Bu durum, bedenin dijital ekonomide bir sermaye biçimi olarak işlev kazandığını ve görünürlüğün performansa bağlı yeni bir emek rejimi doğurduğunu ortaya koymaktadır. TikTok, bu bağlamda, "güzel"in bir baskı aracı haline geldiği, estetiğin etik ve politik boyutlarını dışlayan bir dijital iktidar alanına dönüşmektedir.

Anahtar Kelimeler: Kalokrasi, TikTok estetiği, Beden politikaları, Sosyal medya, Dijital performans

Perceptions and Realities of Gendered Political Discourse in Albania

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Abstract

This paper presents a sociolinguistic study on gender-based variation in Albanian political discourse. It seeks to explore whether such differences exist, how they manifest in linguistic style and how they are perceived by the Albanian public. The study employs a mixed-methods approach, combining a sociolinguistic survey with a textual analysis of political speech delivered in the Albanian Parliament. Survey data were collected from 100 respondents, who evaluated excerpts from parliamentary speeches to determine whether stylistic features reflected a male or female speaking style. In parallel, a corpus of 44 parliamentary speeches (22 by female MPs and 22 by male MPs) was examined to identify stylistic markers associated with gendered discourse. Findings suggest a widespread public perception that gender differences in political discourse do exist, although textual analysis reveals a more complex and varied picture that challenges the traditional male/female dichotomy. This research contributes to the broader sociolinguistic literature by providing empirical insights into the interplay between language, gender and political identity in an under-researched linguistic context such as Albania.

Keywords: gendered discourse, political communication, linguistic style, Albania, gender stereotypes.

Component Analysis of Abbreviations in Media Discourse

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Abstract

In media discourse, abbreviations are used frequently and can be analyzed based on the number and types of their components. These components include graphemes, phonemes, syllables, numbers, and symbols. Abbreviations may be uniform (e.g., UK, BFI) or mixed-type (e.g., BBC4).

Single-component abbreviations are common in British and American media for units (p for pence, g for gram), directions (N, S, E, W), and measurements (C for Celsius, F for Fahrenheit). Their meanings are often clarified by context or accompanying legends, especially in weather forecasts and sports tables (e.g., G for gold, R for rain).

However, such abbreviations are limited due to the small number of alphabet letters and the risk of ambiguity. Their usage is driven by the principle of linguistic economy—simplifying language by shortening frequently used terms.

Keywords: abbreviations, media discourse, component analysis, homonymous abbreviations, symbols, syllables

Examining the Diversity of Microalgae in the Effluent of the Southern Tehran Wastewater Treatment Plant and Feasibility Study of Their Use in the Retreatment Process

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Abstract

With increasing water consumption and pollution from industrial and urban activities, wastewater treatment has become an environmental necessity. Microalgae, as natural agents in wastewater treatment, have gained attention due to their ability to absorb nitrates, phosphates, and heavy metals, reduce organic load, and produce oxygen. This study aimed to identify the diversity of microalgae present in the effluent of the Southern Tehran Wastewater Treatment Plant and assess their potential in improving the treatment process.Water samples were collected from the plant's effluent and cultivated in both liquid and solid media under controlled temperature and light conditions. The algal species were then examined and identified using light microscopy. Additionally, the efficiency of algal ponds in enhancing wastewater treatment was evaluated.The results revealed the presence of various microalgae species, including *Chlorella* sp., *Scenedesmus* sp., *Euglena* sp., *Monoraphidium* sp., and *Closterium* sp. Some of these, such as *Chlorella* and *Scenedesmus*, were found to effectively remove pollutants, including nitrogen and phosphorus compounds, from wastewater. These microalgae can play a significant role in improving effluent quality and reducing environmental contaminants. Furthermore, the establishment of algal ponds could serve as a sustainable and cost-effective bioremediation method for post-treatment of wastewater plant effluent.

Keywords: Wastewater treatment, Microalgae, Bioremediation, Effluent, Nutrient removal

A Computational Perspective on Catalyst–Molecule Interactions

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Abstract

The catalytic production of second-generation biofuels from lignocellulosic biomass offers a sustainable alternative to fossil fuels. Among the various approaches, hydrodeoxygenation (HDO) plays a central role by enabling the conversion of biomass-derived platform molecules into high-quality alkanes through a series of reactions including hydrogenation. Experimental studies have shown that metallic catalysts are essential for these transformations due to the complexity and diversity of the reactions involved. To better understand the underlying mechanisms, a theoretical approach is adopted to identify the adsorption behavior of reactants and intermediates on catalytic surfaces, and to determine the active sites responsible for each elementary step. This mechanistic insight is crucial for the rational design of efficient catalysts tailored to the HDO process.

Keywords: catalytic production, hydrodeoxygenation (HDO), metallic catalysts, DFT, pseudopotentials, basis

Comparison of MPC Based Motion Control Algorithms on Mujoco Hybrid Platform

Mujoco Hibrit Platformunda Mpc Tabanlı Hareket Kontrol Algoritmalarının Karşılaştırılması

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Abstract

Quadruped robots(QRs) have attracted significant attention in recent years compared to wheeled or tracked robots due to their ability to move on rough and sloping terrain. With the advancement of technology, these robots have become extremely prominent in areas such as search and rescue, agricultural activities, exploration in remote areas and logistics operations. With the increasing demand for QRs, the need for high performance motion control strategies has become increasingly evident. Among the existing control techniques, Model Predictive Control (MPC) is a model based approach that predicts the future behavior of the system and continuously optimizes control inputs to maximize robot performance. For this reason, it is considered one of the powerful and preferred methods.

This study presents a comparative analysis of three different MPC based motion control methods: Iterative Linear Quadratic Gaussian (iLQG), Gradient Descent and Predictive Sampling. These algorithms were tested on the Unitree A1 model in a simulation environment using the MJPC platform developed by the Google DeepMind team. The integration of MJPC with the MuJoCo physics engine provides a robust infrastructure and computational environment for conducting predictive control experiments.

The simulation environment was developed using Python and Jupyter Notebook, allowing user interaction, data collection, visualization, and performance evaluations. The scenarios included various locomotion tasks such as walking, trotting, galloping, hill climbing, progressing on unstable ground, and recovery after falling. Time series data and cost function outputs were recorded to evaluate the consistency, efficiency, and responsiveness of each control method.

The results revealed that the iLQG algorithm provided the highest tracking accuracy, fastest convergence, and highest stability under various conditions. This method stood out as a more effective method in terms of maintaining balance and adapting to step transitions. Gradient Descent showed moderate performance but required careful tuning of parameters such as step size and was not robust enough to sudden ground changes. Although Predictive Sampling is an algorithm that does not rely on derivatives, it was considered a suitable alternative that provides stability in simple scenarios due to its lower computational complexity.

In addition, this study has addressed some of the shortcomings of the MJPC platform, such as benchmarking tools and visualization capabilities. A special evaluation interface has been developed that allows for more detailed performance analysis and

different simulation scenarios. This advanced structure is thought to be a helpful approach for future research to improve the locomotion of QRs with predictive control methods.

Keywords: iLQG, Model Predictive Control, MuJoCo, Predictive Sampling, Quadruped Robots

Özet

Dört ayaklı robotlar, engebeli ve eğimli arazilerde hareket edebilme yetenekleri sayesinde, tekerlekli veya paletli robotlara kıyasla son yıllarda önemli ölçüde ilgi görmüştür. Teknolojinin ilerlemesiyle birlikte bu robotlar; arama-kurtarma, tarımsal faaliyetler, uzak bölgelerde keşif ve lojistik operasyonlar gibi alanlarda son derece öne çıkmıştır. Dört ayaklı robotlara olan talebin artmasıyla birlikte, yüksek performanslı hareket kontrol stratejilerine duyulan ihtiyaç da giderek daha belirgin hale gelmiştir. Mevcut kontrol teknikleri arasında, Model Öngörülü Kontrol (MPC), sistemin gelecekteki davranışını öngören ve robot performansını en üst düzeye çıkarmak için kontrol girişlerini sürekli optimize eden modele dayalı bir yaklaşımdır. Bu nedenle güçlü ve tercih edilen yöntemlerden biri olarak kabul edilmektedir.

Bu çalışma, MPC tabanlı üç farklı hareket kontrol yönteminin karşılaştırmalı analizini sunmaktadır: İteratif Lineer Kuadratik Gauss (iLQG), Gradyan İnişi ve Öngörülü Örnekleme. Bu algoritmalar, Google DeepMind ekibi tarafından geliştirilen MJPC platformu kullanılarak simülasyon ortamında Unitree A1 modeli üzerinde test edilmiştir. MJPC'nin MuJoCo fizik motoru ile entegrasyonu, öngörüye dayalı kontrol deneylerinin yürütülmesi için sağlam bir altyapı ve hesaplama ortamı sağlamaktadır.

Simülasyon ortamı, Python ve Jupyter Notebook kullanılarak geliştirilmiş olup kullanıcı etkileşimi, veri toplama, görselleştirme ve performans değerlendirmelerine olanak tanımaktadır. Senaryolarda yürüme, koşma, dörtnala gitme, yokuş tırmanma, dengesiz zeminde ilerleme ve düşme sonrası toparlanma gibi çeşitli hareket görevleri yer almaktadır. Her bir kontrol yönteminin tutarlılığını, verimliliğini ve tepki hızını değerlendirmek amacıyla zaman serisi verileri ve maliyet fonksiyonu çıktıları kaydedilmiştir.

Sonuçlar, iLQG algoritmasının çeşitli koşullar altında en yüksek izleme doğruluğunu, en hızlı yakınsamayı ve en yüksek stabiliteyi sağladığını ortaya koymuştur. Bu yöntem, dengeyi koruma ve adım geçişlerine uyum sağlama açısından daha etkili bir yöntem olarak öne çıkmıştır. Gradyan İnişi, orta düzeyde bir performans sergilemiş; ancak adım büyüklüğü gibi parametrelerin dikkatli şekilde ayarlanmasını gerektirmiş ve ani zemin değişikliklerine karşı yeterince dayanıklı olamamıştır. Tahmini Örnekleme, türevlere dayanmayan bir algoritma olmasına rağmen, daha düşük hesaplama karmaşıklığı nedeniyle basit senaryolarda kararlılık sağlayan uygun bir alternatif olarak değerlendirilmiştir.

Ayrıca bu çalışma, MJPC platformunun karşılaştırma araçları ve görselleştirme yetenekleri gibi bazı eksikliklerini de ele almıştır. Daha ayrıntılı performans analizlerine ve farklı simülasyon senaryolarına olanak tanıyan özel bir değerlendirme arayüzü geliştirilmiştir. Bu gelişmiş yapının, dört ayaklı robotların hareket kabiliyetini öngörülü kontrol yöntemleriyle geliştirmeye yönelik gelecekteki araştırmalar için yararlı bir yaklaşım olacağı düşünülmektedir.

Anahtar Kelimeler: iLQG, Model Tahminli Kontrol, MuJoCo, Tahminli Örnekleme, Dört Ayaklı Robotlar

A Skin Effect in Horizontal Wells

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Abstract

Increasing the capacity of depleted natural gas fields to provide additional quantities of natural gas is being achieved recently through the use of horizontal wells.

But even if these wells achieve performances that are difficult to achieve through vertical wells, the skin effect (omnipresent and complex) still causes natural gas production (flow through porous media) to be affected by creating additional flow resistance in the wellbore area.

Understanding, quantifying and managing the skin effect makes the exploitation of gas fields through horizontal wells viable, this article discussing the numerical modelling of the fluid flow behaviour in the wellbore area affected by the skin effect.

Keywords: horizontal gas drilling, skin effects, modelling of the fluid's velocity

Modeling the Effects of Accidents on Employees during Testing of Flare Preventers

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Abstract

The testing of blowout preventers for oil and gas wells is carried out according to API 16 A standards, which consists of performing the hydrostatic, closing test, mandrel test for horizontal blowout preventers and tests for the hydraulic drive system (as an integral part of the preventer or delivered separately) and consists of performing the hydrostatic (strength) test of the drive system body, the analysis of the closing of the horizontal preventer jaws, the closing test of the preventer at minimum pressure, equipped with a fixed hole and/or variable hole jaw, the closing test of the preventer at minimum pressure, equipped with a total jaw, the cutting and sealing test of the total cutting jaw of the horizontal preventer, the mechanical locking test of the fixed hole jaw with minimum pressure in the preventer body and the mechanical locking test of the variable hole jaw with minimum pressure in the preventer body. In the article, we conducted a study on the effects of pressure tests on employees.

Keywords: Blowout preventers, modelling, well

An Energy Efficiency Model based on Heat Pumps of a Public Buılding with Conventional Heating

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Abstract

Nowadays, the increase in energy prices from conventional sources and the implementation of environmental protection policies by reducing the carbon footprint have brought to the forefront the need to identify alternative solutions for producing energy from sustainable/renewable sources which, in addition to reducing energy costs, also ensure the reduction of the carbon footprint of buildings, installations or means of transport. In the context of sustainability and sustainable development, buildings must be considered as “organisms” in continuous evolution, which over time must be rehabilitated and modernized to meet the requirements established by the user in a certain period. Energy efficiency of buildings involves reducing the energy requirement while ensuring appropriate comfort conditions, achieving two important objectives of sustainable development: saving primary resources and reducing polluting emissions into the environment.

The paper presents an energy efficiency model based on the implementation of a complex heat pump system in an old 7000 sq m public building with conventional heating on the campus of the University of Petroleum and Gas in Ploiesti.

Keywords: *energy saver, heat pumps, heat recovery*

An Treatment and Recovery of Petroleum Products Extracted from Polluted Water

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Abstract

Water pollution with petroleum products is a major environmental problem at a global level, with significant negative effects on aquatic ecosystems and human health [1].

In the current context of the energy crisis and the need to find alternative energy sources, the recovery and valorization of petroleum products from polluted waters becomes an attractive solution from both an ecological and economic point of view [2].

The particular cases of waters polluted with petroleum products treated with gas nanobubbles described in the previous chapters – polluted waters from rivers and lakes, polluted municipal waters, polluted waters from landfills, polluted waters from mines are addressed in the present chapter for the further treatment and valorization of the isolated petroleum product in the presented cases.

This paper presents an integrated approach for the treatment of waters polluted with petroleum products, followed by the energetic valorization of the recovered petroleum products. The described process includes separating traces of petroleum products from polluted water, cleaning the petroleum concentrate, treating it by low-temperature pyrolysis-gasification to produce synthesis gas, and finally using the synthesis gas in a cogeneration system to produce electricity and heat.

Keywords: pollution, environments, petroleum

-Fuzzy Logic-Based MPPT Approach for Optimizing Photovoltaic Pumping System Performance

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Abstract

This study presents a comparative analysis of two MPPT control strategies aimed at achieving optimal regulation of the output voltage from a photovoltaic (PV) module and effective maximum power point tracking under varying irradiance levels, fluctuations in the speed of a permanent magnet DC motor, and changes in mechanical load torque within a PV water pumping system. The conventional MPPT technique, Perturb and Observe P&O, which generates a reference voltage, is compared with an artificial intelligence-based approach: Fuzzy Logic Control of the Mamdani type (FL-Mamdani).

The system under investigation consists of a PV generator connected to a Boost-type DC-DC converter that powers a motor-pump assembly. The key performance indicator for comparison is the extracted power under rapidly changing irradiance conditions. All control algorithm designs and simulations were carried out using the MATLAB/Simulink environment.

The results demonstrate that the FL-Mamdani controller offers superior efficiency and robustness compared to the classical P&O method. This intelligent control approach significantly enhances system responsiveness and stability, particularly during abrupt irradiance variations.

Keywords: MPPT, P&O, FL-Mamdani, MATLAB/Simulink, motor-pump

Towards a Framework for Bilevel Optimal Control Problems

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Abstract

This work presents a bilevel optimization framework for robust control design in the presence of adversarial disturbances. The formulation consists of an upper-level parameter optimization problem coupled with a lower-level minimax control problem governed by dynamic state constraints. Two principal reformulations are proposed. The first employs an implicit function-based approach to derive sensitivity relations from the lower-level solution mapping, elucidating the influence of design parameters on the robust control equilibrium. The second is a Karush-Kuhn-Tucker (KKT) reformulation that recasts the bilevel problem as a single-level optimization with equilibrium constraints. The proposed analysis establishes verifiable optimality conditions that effectively address the nonsmooth nature inherent in minimax control structures. This theoretical framework offers novel tools for robust control co-design, providing explicit characterizations of the interaction between system parameters and worst-case disturbance rejection. Overall, the work advances the mathematical foundations of bilevel optimization in control engineering contexts where robustness guarantees are essential.

Keywords: Bilevel optimization, robust control, minimax problems, implicit function theorem, KKT optimality conditions

The Galileo Satellite Navigation System: Structure and Its Role in Satellite Navigation, and Challenges in Precise Positioning

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Abstract

Galileo is the European Union (EU) and the European Space Agency (ESA) Global Positioning System, developed to provide precise positioning, navigation, and timing services under civilian control across the globe. The positioning and navigation algorithms are functionally equivalent to that of the Global Positioning System (GPS) theory and principles. This contribution is aimed to investigate the structure, advantages, and challenges of the Galileo system in positioning applications. Furthermore, Galileo's system design, signal reliability, and operational performance are analysed using ESA documentation and comparative data with GPS. An in-depth comprehension of Galileo's potential and influence in the evolving environment of global navigation technologies is also provided. It is discussed that Galileo significantly improves different types of global navigation however, it requires further developing infrastructure and coordinating policies to attain its full potential.

Keywords: Galileo, GPS, Positioning, Navigation, ESA

A Comprehensive Literature Review of Kinetic Facades in Commercial High Rise Buildings

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Abstract

Achieving optimal thermal comfort, daylighting and operational energy usage in commercial high-rise buildings in India is becoming more difficult due to urban congestion and energy demand rise. In order to increase the energy efficiency of commercial high-rise buildings, this research explores the use of kinetic facades as a responsive element. A thorough literature analysis and a comparison of commercial high-rises with and without kinetic facades are two of the many layers of this study's methodology. In order to support sustainable development and national energy efficiency goals, the report ends with policy proposals for ECBC to include kinetic facades into India's future commercial buildings.

Keywords: Energy efficiency, Commercial, Kinetic facades, India

Effect of Multisensory False Memories on Episodic and Semantic Memory and Amnesia in Patients with Hippocampal Lesions

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Abstract

The hippocampus plays a crucial role in the formation of episodic memory, spatial navigation, and emotional regulation. Damage to hippocampus may lead to cognitive and emotional deficits, particularly episodic and semantic memory impairments. Previous researches have done extensive research on hippocampal dysfunction, but the role of multimodal false memory induction in individuals with acute hippocampal lesions is yet to be explored. This study explored the effects of sequential (first and second order) false memory induction (visual, auditory, and combined modalities) on episodic memory retrieval, semantic association and recognition, and amnesiac symptoms in patients with acute hippocampal damage as compared to healthy individuals. This study uses a temporal, double-blind, mixed within-group and between-group randomized block design with event-related tasks. This study recruited Sixty participants (Acute Hippocampal damage patients n=30; healthy individuals n=30), age ranged from 18 to 65 years, from multiple hospitals. Thirty participants with acute hippocampal damage were recruited from the neurology department of Fauji Foundation Hospital, Pakistan, where the experiment was conducted using the Psychopy Software. The thirty healthy participants were recruited at the Cognitive and Neuroscience Lab within the psychology department at the Foundation University School of Science and Technology (FUSST). Three standardized cognitive tasks were used to examine episodic and semantic memory and amnesia in patients with acute hippocampal lesions. The findings revealed that individuals with hippocampal lesions showed heightened susceptibility to false memories, especially with combined auditory-visual stimuli. Particularly in episodic memory retrieval, whereas semantic memory tasks suggested potential regulatory factors. Whereas, healthy individuals depicted consistent decline in performance across tasks during false memory induction. These findings highlight the hippocampus critical role in defying false memory formation and focus its interactions with other neural systems in memory reconstruction.

Keywords: Multisensory False Memory, Episodic Memory, Semantic Memory, Amnesia, Acv Hippocampal Damage Patients, Healthy Individual

Assessing the Risks that Hinder the Sustainable Development of Forest Ecosystems in Algeria

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Abstract

It is widely admitted that controlling the sustainability of forest and peri-forest ecosystems necessarily involves identifying physical and biological indicators that make it possible to assess the status of these ecosystems. When these indicators are considered alone, they only provide partial information. For this reason, it is deemed more appropriate to also use biophysical, anthropogenic and technical indicators which must report on the state of the environment (state indicators), its evolution (state change indicators), and its health (alert indicators).

For the purpose of better understanding and managing the dynamics of forest ecosystems in semi-arid zones with the view of ensuring their sustainability, it is deemed necessary to develop a reference matrix that can be used to identify dangers and risks. This matrix would include relevant indicators that are easy to assess and monitor. It should bring together all the potential indicators that can serve as guides. A score is then given to each of these indicators, depending on the role it plays in sustainability. The ratings are: 1: Bad, 2: Good, 3: Very good. The selected indicators, which are 20 in number, are then classified into three categories, i.e. technical, ecological and organizational categories.

Moreover, the identification and evaluation of these indicators helps to better understand their state-response and, consequently, to propose solutions or alternatives to their preservation as part of sustainable management.

The results obtained, using the failure modes and effects analysis (FMEA) approach, suggest that the major risks hindering the sustainable development of forest ecosystems in Algeria are in the following order of decreasing importance: Lack of professionalism; Use of inappropriate techniques; Insufficient studies on the subject; and Poor management.

Keywords: Management, Matrix, Risks, Sustainability, Forest ecosystems, Algeria

Spatial Changes and Sustainable Development Strategies of a Steppic Ecosystem in the South of Tlemcen, Algeria

Mutations spatiales et stratégies de développement durable d'un écosystème steppique dans le sud de Tlemcen, Algérie

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Abstract

This study aims to analyze and propose solutions for the preservation of the steppe ecosystem in the southern region of Tlemcen. This area, characterized by an arid to semi-arid climate, faces major challenges, including land degradation, desertification, and biodiversity loss, exacerbated by human activities such as intensive agriculture, growing urbanization, and climate change.

The use of a diachronic study, based on the analysis of satellite images (2001, 2011, and 2021), allowed for the mapping of changes in land use and vegetation cover over the past twenty years.

The results show a significant decrease in grazing land areas, which fell from 49% to 25% of the total area during the period [2001 – 2021], and an increase in bare soil areas, which rose from 31% to 59% for the same period, revealing severe degradation of the steppe ecosystem. The rapid growth of livestock, particularly sheep, has led to overgrazing, with five (05) sheep per hectare, worsening vegetation cover degradation and rendering the grazing lands incapable of supporting current pressures. Thus, land use and vegetation cover maps, generated from remote sensing and geographic information system (GIS) data, are valuable tools for understanding land use changes and their impacts on vegetation. They provide detailed information on areas affected by degradation, enabling managers to implement targeted measures for the rehabilitation and conservation of affected lands. As part of the fight against desertification and to address this unfortunate situation, it is recommended to implement sustainable agricultural and pastoral practices. This includes delimiting and rotating grazing areas, adopting soil conservation techniques, and creating vegetation barriers. Raising awareness among local communities and integrating their traditional knowledge is also essential to ensure the sustainability of this fragile ecosystem.

Keywords: Steppe ecosystem, Spatial analysis, Diachronic study, Desertification, Sustainable management, Tlemcen, Algeria.

Resume

Cette étude vise à analyser et à proposer des solutions pour la préservation de l'écosystème steppique dans le Sud de Tlemcen. Cette région, caractérisée par un climat aride à semi-aride, fait face à des défis majeurs, notamment la dégradation des terres, la désertification, et la perte de biodiversité, exacerbés par des actions humaines, tels que l'agriculture intensive, l'urbanisation croissante et le changement climatique.

L'utilisation d'une étude diachronique, basée sur l'analyse des images satellites (2001, 2011 et 2021), a permis de cartographier les changements dans l'occupation des sols et le couvert végétal au cours des vingt dernières années.

Les résultats obtenus montrent une diminution significative des superficies de parcours passant de 49 % à 25 % de la superficie totale durant la période [2001 – 2021] et une augmentation des zones de sols nus, passant de 31 % à 59 % pour la même période, révélant une dégradation sévère de l'écosystème steppique. La croissance rapide du cheptel, notamment des ovins, a conduit à une surcharge pastorale, de cinq (05) moutons par hectare, aggravant la dégradation du couvert végétal et rendant les parcours incapables de supporter la pression actuelle. Ainsi, les cartes d'occupation des sols et du couvert végétal, générées à partir de données de télédétection et de systèmes d'information géographique (S.I.G), sont des outils précieux pour comprendre l'évolution des usages des terres et leurs impacts sur la végétation. Elles fournissent des informations détaillées sur les zones affectées par la dégradation, permettant aux gestionnaires de mettre en œuvre des mesures ciblées pour la réhabilitation et la conservation des terres affectées. Dans le cadre de la lutte contre la désertification et pour remédier à cette situation lamentable, il est préconisé de mettre en place des pratiques agricoles et pastorales durables. Cela inclut la délimitation et la rotation des zones de pâturage, l'adoption de techniques de conservation des sols et la création de barrières végétales. La sensibilisation des communautés locales et l'intégration de leurs connaissances traditionnelles sont également essentielles pour assurer la durabilité de cet écosystème fragilisé.

Mots-clés: Ecosystème steppique, Analyse spatiale, Etude diachronique, Désertification, Gestion durable, Tlemcen, Algérie.

Comparative Analysis of Phenolic Compounds, Flavonoids, and Antioxidant Activity in Aqueous Extracts of Different Plant Species

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Abstract

Water, as a universal solvent, plays a crucial role in the extraction of bioactive compounds from plant materials due to its polar nature and ability to form hydrogen bonds. In this study, aqueous extracts were analyzed for total phenolic content (TPC), total flavonoid content (TFC), and antioxidant activity, providing insight into the efficiency of water-based solvents for isolating polar phenolic compounds. Phenolic and flavonoid compounds are predominantly polar or semi-polar molecules, making them readily soluble in water. The highest TPC and TFC values observed in nettle (Urtica dioica) and cinnamon (Cinnamomum verum) extracts indicate efficient extraction of these compounds, which correlates directly with significant antioxidant activity measured by FRAP and DPPH assays. Conversely, lower values in black cumin (Nigella sativa) and bitter wormwood (Artemisia absinthium) may be attributed to a lower content of polar phenolics or limited water solubility. These results confirm that although water is often less effective than organic solvents for extracting less polar bioactives, it can efficiently extract substantial amounts of phenols and flavonoids from plants rich in polar compounds. Therefore, aqueous extracts represent a safe, eco-friendly, and effective approach to obtaining natural antioxidants, with promising applications in pharmaceutical and food industries.

Keywords: Aqueous extraction, Phenolic compounds, Flavonoids, Antioxidant activity, Natural antioxidants

The Role of Peer-to-peer Electricity Trading in Increasing Renewable Energy Generation

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Abstract

Energy systems worldwide face a critical challenge to maintain supply-demand equilibrium because of increasing consumption patterns alongside limited production abilities. This research examines how peer-to-peer (P2P) electricity trading functions as an innovative solution to increase renewable energy production and usage in specific countries. The direct electricity exchange system between prosumers and consumers through P2P trading enables renewable energy adoption while promoting energy independence. The implementation of this system stabilizes the electrical grid through peak demand reduction and distributed energy resource optimization together with blockchain-based smart contract technology. The research uses dynamic panel econometric methods to analyze solar electricity growth through P2P policy effects and renewable energy expansion and demonstrates decentralized energy network effectiveness. The successful adoption of P2P trading requires supportive policies and consumer education because of regulatory obstacles together with smart infrastructure requirements and data privacy and security concerns. The research demonstrates P2P trading potential to create sustainable energy systems yet stresses the need for solid infrastructure and legal frameworks for successful deployment.

Keywords: peer-to-peer, electricity energy, renewable energy generation

Magnetic Effects in Semiconductors

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Abstract

It is known that a moving electric charge can be viewed as an electric current and this charge creates a magnetic field around itself. The interaction of the magnetic field created as a result of the movement of a charged particle with an external magnetic field causes a change in the trajectory of the particle's movement. The effect of a magnetic field on the movement of a charged particle is used in electronography, electron microscopy, nuclear spectroscopy, the study and analysis of cosmic rays, accelerators of charged particles, electron paramagnetic and nuclear resonance, the Stark effect, etc.

Electromagnetic induction arises as a result of the Lorentz force. In semiconductors, free electrons move chaotically and the magnetic fields of these charges compensate each other. When a conductor moves with a speed ϑ, some of the electrons increase their speed, while the speed of another particle decreases. When such a moving conductor is affected by an external magnetic field, the electrons are subjected to varying Lorentz forces. This leads to the displacement of the electrons, which causes the generation of an induced emf.

Keywords: semiconductor, electronography, electron, microscope, nucleus, spectroscopy, electromagnetic

Plant Derived Exosome-like Nanoparticles (PDELNs): Isolation, Characterisation, and Effect on Various Diseases

Bitki Kaynaklı Ekzosom Benzeri Nanopartiküller (BKEBN): İzolasyon, Karakterizasyon ve Çeşitli Hastalıklar Üzerindeki Etkisi

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Abstract

Plant-derived exosome-like nanoparticles (PDELNs) are a type of naturally produced lipid bilayer extracellular vesicles that measure 50-200 nm in diameter and are used for transporting materials and information between cells. PDELNs have numerous advantages, including low toxicity and immunogenicity, effective cellular uptake, high biocompatibility, easy passage through the blood-brain barrier, stability, and the capability for large-scale manufacture. By releasing their contents, which include proteins, lipids, miRNA, and mRNA, PDELNs function to regulate intercellular communication. PDELNs have attracted considerable interest in scientific study owing to their potential medical applications, with studies investigating their comprehensive applicability in various cancers, brain diseases, and wound healing. PDELNs have been demonstrated to have a wide range of therapeutic advantages, including anticancer, anti-inflammatory, antioxidant, and neuroprotective activities. In this context, this report is important in terms of providing researchers with extensive information on the isolation, characterization, and application areas of PDELNs, providing a new perspective in their studies.

Keywords: Extracellular vesicles; PDELNs; cancer; brain diseases

Özet

Bitki kaynaklı ekzosom benzeri nanopartiküller (BKEBN),, çapı 50-200 nm arasında değişen ve hücreler arasında materyal ve bilgi taşımak için kullanılan, doğal olarak üretilen bir tür lipit çift katmanlı hücre dışı veziküllerdir. BKEBN, düşük toksisite ve immünogenite, etkili hücresel alım, yüksek biyouyumluluk, kan-beyin bariyerinden kolay geçiş, stabilite ve büyük ölçekli üretim kapasitesi gibi çok sayıda avantaja sahiptir. BKEBN; proteinler, lipitler, miRNA ve mRNA gibi kargo elemanlarını serbest bırakarak hücreler arası iletişimi düzenleme işlevi görür. BKEBN, çeşitli kanser tipleri, beyin hastalıkları ve yara iyileşmesinde kapsamlı uygulanabilirliği ve potansiyel tıbbi uygulamaları nedeniyle bilimsel çalışmalarda ön plana çıkmaktadır. Yapılan çalışmalarda, BKEBN'in; antikanser, anti-inflamatuar, antioksidan ve nöroprotektif etkileri dahil olmak çok sayda etkileri gösterilmiştir. Bu bağlamda bu bildiri, araştırmacılara BKEBN'in; izolasyonu, karakterizasyonu ve uygulama alanları hakkında kapsamlı bilgi sağlaması ve çalışmalarına yeni bir bakış açısı kazandırması açısından önemlidir.

Anahtar Kelimeler: Hücre dışı vezikül; BKEBN; kanser; beyin hastalıkları

Studying the Effect of Educational Intervention on Cervical Cancer Screening among School Teachers in Western Iran: Application of the Extensive Parallel Process Model

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Abstract

Introduction: Cervical cancer is one of the most common cancers among women in the world and is one of the few cancers that can be easily detected in the premalignant stage. A major factor in mortality from cervical cancer in developing countries is the lack of appropriate screening methods. Studies have shown that theory-based interventions in this field can be very effective, therefore, the present study aimed to determine the effect of educational interventions based on the extensive parallel process model on cervical cancer screening among school teachers in western Iran .

Methods: This quasi-experimental study was conducted on 120 school teachers in Kermanshah province who were randomly selected in two cities: Islamabad-e Gharb and Sar-e Pol-e Zahab. The data collection tool was a researcher-made questionnaire based on the constructs of the extensive parallel process model, the validity and reliability of which were confirmed.. Data analysis was performed using statistical tests and SPSS 21software.

Findings: The average age of the participants in the study was 6.67±38.63and their average age of marriage was 3.81±21.66. According to the results of this study, before the educational intervention, all individuals in the test group (60people) and control group (60people) were in the threat assessment stage, but 2months after the educational intervention, 26individuals (%43.3) of the test group entered the face assessment stage, while this figure was 1person (%1.7) in the control group, which was statistically significant. Before the educational intervention, there was no significant difference between the constructs of the extensive parallel process model, but after the educational intervention, the mean scores of the constructs of the extensive parallel process model and the mean behavioral intention rating increased

in the test group before the intervention compared to after the intervention, which was statistically significant (P-value < 0.001).

Conclusion: In addition to designing and implementing the educational program, based on the extensive parallel process model, Pap smear testing requires the investigation of other obstacles such as lack of time, fear, embarrassment, etc., and focusing on the determining factors of performing cervical cancer screening can be an effective step in reducing mortality from this disease

Keywords: cervical cancer, screening, intervention

An Analysis of the Relationship Between Iodine and Goiter and Nodules in the Thyroid Gland

Troid Bezinde Guatr ve Nodüllerin İyotla İlişkisi Üzerine Bir Analiz

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Abstract

Iodine, which plays a role in the synthesis of thyroid hormones, is taken into follicular cells along with Na^+. With the Wolf-Chaikoff effect, the pump is inhibited at high iodine concentration. Iodide is converted to iodine; iodine binds to tyrosine in thyroglobulin via the enzyme iodination. Binding of one iodine to tyrosine forms MIT; binding of two iodines forms DIT. T4 is formed from two DITs, and T3 from one MIT and one DIT.

Iodine is an essential element for the synthesis of thyroid hormones. When there is insufficient iodine intake, the thyroid gland enlarges in an attempt to increase hormone production, leading to the development of goiter. Therefore, iodine deficiency is one of the most common causes of goiter, especially in endemic regions. On the other hand, excessive iodine intake can also disrupt thyroid function in some individuals, potentially causing goiter and the formation of nodules.

This study discusses the iodine element used in the production of these hormones, which thus affects the metabolic activities of all tissues; how iodine consumption should be in our daily lives for health; in which foods it is found, which patient groups should pay attention to salt and iodine intake in their diets, and what diseases may occur in cases of deficiency or excess.

Keywords: Iodine, thyroid, thyroid hormones

Özet

Tiroid hormonlarının yapımında rolü olan iyot, foliküler hücrelere Na^+ ile beraber alınır. Wolf-Chaikoff etkisiyle yüksek iyot konsantrasyonunda pompa inhibe olur. İyodür, iyota dönüştürülür; iyot, iyodinaz enzimiyle tiroglobulindeki tirozin'e bağlanır. Tirozine bir iyot bağlanmasıyla MIT; iki iyot bağlanmasıyla DIT; DIT ×2 ile T4, MIT + DIT ile T3 oluşur.

İyot, tiroid hormonlarının sentezi için gerekli temel bir elementtir. Yeterli iyot alınmadığında tiroid bezi, hormon üretimini artırmak amacıyla büyüyerek guatr oluşumuna neden olabilir. Bu nedenle, iyot eksikliği, özellikle endemik bölgelerde guatrın en yaygın nedenlerinden biridir. Öte yandan, aşırı iyot alımı da bazı bireylerde tiroid fonksiyonlarını bozarak guatr ve nodül gelişimine yol açabilir.

Bu çalışmada bu hormonların üretiminde kullanılan ve bu sayede tüm dokuların metabolik faaliyetlerini etkileyen iyot elementi, iyot tüketiminin sağlığımız için günlük yaşamımızda nasıl olması gerektiği; hangi besinlerde bulunduğu, hangi hasta gruplarının tuz ve iyot diyetinde dikkat etmesi gerektiği; eksikliğinde veya fazlalığında ne gibi hastalıklarla karşılaşılabileceği ele alınmıştır.

Anahtar Kelimeler: iyot, troid, troid hormonu

Impact of Chronic Disease Level on Dual-Task Performance in Elderly Individuals

Yaşlı Bireylerde Kronik Hastalık Düzeyinin İkili Görev Performansı Üzerine Etkisi

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Abstract

Background:
Multimorbidity is highly prevalent in older adults and is associated with declines in both cognitive and physical function. Dual-task activities, which require attentional and motor integration, become more challenging with age and are linked to increased fall risk.

Objective:
This study aimed to examine the association between chronic disease burden and dual-task performance in older individuals.

Methods:
A total of 42 older adults residing in a nursing home in Bartın, Turkey, were classified into low, moderate, and high comorbidity groups using the Modified Charlson Comorbidity Index. Assessments included the Mini-Mental State Examination (MMSE), handgrip strength, Short Physical Performance Battery (SPPB), Timed Up and Go Test (TUG) under single and cognitive dual-task conditions, and the Physical Activity Scale for the Elderly (PASE).

Results:
The high comorbidity group demonstrated significantly longer TUG and dual-task durations compared to the other groups ($p<0.05$). Comorbidity score was negatively correlated with handgrip strength and SPPB, and positively correlated with TUG and dual-task times ($p<0.05$).

Conclusion:
Increased chronic disease burden negatively affects dual-task gait performance in older adults. These findings suggest that multimorbidity may compromise cognitive-motor function and increase the risk of falls and loss of independence

Keywords: Multimorbidity, Dual-task performance, Gait, Older adults

Özet

Giriş:
İleri yaşta çoklu kronik hastalıkların (multimorbidite) görülme sıklığı oldukça yüksektir ve bu durum bilişsel ve fiziksel işlevlerde azalmalarla ilişkilidir. Dikkat ve motor entegrasyon gerektiren ikili görev aktiviteleri yaşla birlikte zorlaşmakta ve artan düşme riski ile bağlantılıdır.

Amaç:
Bu çalışmanın amacı, yaşlı bireylerde kronik hastalık yükü ile ikili görev performansı arasındaki ilişkinin incelenmesidir.

Yöntem:
Bartın ilinde bir huzurevinde yaşayan 42 yaşlı birey, Modifiye Charlson Komorbidite İndeksi kullanılarak düşük, orta ve yüksek komorbidite gruplarına ayrılmıştır. Katılımcılara Mini Mental Durum Testi (MMSE), el kavrama kuvveti, Kısa Fiziksel Performans Bataryası (SPPB), Zamanlı Kalk-Yürü Testi (ZKYT) (tekli ve bilişsel ikili görev koşullarında) ve Yaşlılar için Fiziksel Aktivite Ölçeği (PASE) uygulanmıştır.

Bulgular:
Yüksek komorbidite grubunda ZKYT ve ikili görev süreleri diğer gruplara kıyasla anlamlı düzeyde daha uzun bulunmuştur ($p<0,05$). Komorbidite puanları ile el kavrama kuvveti ve SPPB arasında negatif; ZKYT ve ikili görev süreleri ile pozitif korelasyon saptanmıştır ($p<0,05$).

Sonuç:
Artan kronik hastalık yükü, yaşlı bireylerde ikili görev yürüyüş performansını olumsuz yönde etkilemektedir. Bu bulgular, multimorbiditenin bilişsel-motor işlevselliği bozarak düşme ve bağımsızlık kaybı riskini artırabileceğini göstermektedir.

Anahtar Kelimeler: Çoklu hastalık, İkili görev performansı, Yürüme, Yaşlı bireyler

Association of Myofascial Trigger Points in Posterior Scapular Muscles Among Athletes from Various Sports Disciplines: A Cross-Sectional Study

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Abstract

Background:
Myofascial trigger points (MTrPs) are a common musculoskeletal issue, particularly in athletes due to repetitive strain and muscle overuse. Scapular muscles are especially vulnerable due to their role in shoulder functioning and stability.

Objective:
To assess the prevalence of active MTrPs in posterior scapular muscles among athletes from various sports disciplines and to examine their association with side of injury and limb dominance.

Methods:
216 competitive athletes from eight sports (Athletics, Handball, Hockey, Kabaddi, Taekwondo, Volleyball, Weightlifting, Wrestling) were assessed bilaterally for active MTrPs in nine posterior scapular muscles using pincer palpation technique. Chi-square test was used for association analysis.

Results:
Upper Trapezius showed the highest prevalence (86.1%), followed by Supraspinatus (67.1%) and Infraspinatus (64.9%). Dominant side injuries accounted for 47.2% of cases. MTrPs were significantly associated with dominant-side injuries in several muscles, except Teres Major and Minor. No significant association was found between sports discipline and injury side (p = 0.122), or between muscle involvement and sports discipline (p = 0.197).

Conclusion:
MTrPs are highly prevalent among athletes, especially in the Upper Trapezius, Supraspinatus, and Infraspinatus. These findings suggest that MTrPs are not sport-specific, reinforcing the need for early screening and targeted interventions even in non-overhead sports.

Keywords: Myofascial Trigger Points, Sports disciplines, Athletes, Prevalence, Scapular Muscles

Multiscale-Aware Vision Transformer for Accurate Echocardiographic Diagnosis of Aortic Stenosis

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Abstract

Aortic stenosis (AS) is a life-threatening heart valve disease where timely detection and severity classification are essential for effective treatment planning. Existing automated approaches, including CNNs and Vision Transformers (ViTs), often struggle with multiscale feature entanglement and lack spatial inductive biases, limiting their ability to distinguish fine-grained anatomical details from echocardiographic images. To address these challenges, we propose MultiScaleViT, a multiscale-aware Vision Transformer designed for AS detection and severity classification. First, a MultiScale Attention (MSA) module is introduced, which separates feature extraction into two branches: Global-Scale Attention (GSA) for capturing global semantic context and Local-Scale Attention (LSA) for preserving fine-grained local details. Second, to improve spatial discrimination, a Spatial-Enhanced Convolution Module (SECM) is integrated, which uses depth-wise convolutions and channel gating to enhance clinically relevant regions while suppressing noise and redundant background. The model is evaluated on the TMED echocardiography dataset, MultiScaleViT achieves state-of-the-art performance with 90.7% accuracy for image-wise AS detection, 79.01% for severity classification, and 88.10% and 78.43% for patient-wise AS detection and severity classification, respectively, significantly outperforming baseline models. These results demonstrate the effectiveness of MultiScaleViT in capturing the multiscale and spatial complexities of echocardiography data for a robust diagnosis of AS.

Keywords: Aortic stenosis, echocardiography, Vision Transformer, automated diagnosis.

A Vision Transformer with Angular Attention for Robust Automated Echocardiographic Analysis

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Abstract

Cardiovascular diseases, a leading cause of mortality, demand accurate automated diagnostic tools to improve early detection and patient outcomes. Echocardiography is a standard imaging technique for assessing heart conditions. However, existing Vision Transformer models struggle with echocardiographic images due to spatial redundancy and speckle noise, which impair feature extraction, and acquisition angle variability, which reduces attention robustness. To address these challenges, we propose a novel Vision Transformer-based model incorporating two specialized modules. The Effcient Refinement Module (EFRM) mitigates spatial redundancy and noise to enhance clinically relevant feature extraction. The Linear Angular Attention (LAA) module improves robustness against acquisition angle variability through angular-aware rectification, capturing anatomically meaningful patterns. Proposed model is evaluated on the TMED dataset, achieving a detection accuracy of 90.35% and a severity classification accuracy of 80.69%, demonstrating state-of-the-art performance for automated echocardiographic analysis.

Keywords: Cardiovascular disease, echocardiography, Vision Transformer, automated diagnosis, feature extraction.

Mental Health of Firefighters: Occupational Medical Case Series Study

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Abstract

Introduction: Firefighters, essential actors in civil safety, practice a profession exposed to emotionally intense and potentially traumatic situations. In this highly demanding professional context, our medical visits have revealed a significant psychiatric symptomatology. This observation has prompted us to conduct an investigation with the **objective** of precisely characterizing the nature of mental health disorders among these firefighters, identifying potentially contributive professional factors, and proposing recommendations. **Method:** Retrospective descriptive study of twelve cases presenting psychiatric disorders among firefighters, identified during various occupational medical visits, combining medical records analysis and individual interviews. Management was carried out in collaboration with a psychiatrist. **Results:** Almost the majority of participants report experiencing traumatic events during rescue and intervention operations involving child victims, with particular mention of the victims' screams. Post-traumatic stress symptomatology, present in almost all participants (11/12), is primarily characterized by avoidance syndrome (9/12), repetition syndrome (8/12), sleep disorders (7/12), and significant alteration of cognitions and mood (7/12), while one clinical case was identified as presenting a chronic psychosis type schizophrenia, with delusions, behavioral disorders, and hallucinations, initially reported by colleagues. **Conclusion:** Our study highlights the complexity and severity of mental health issues among firefighters, revealing a significant psychological vulnerability directly linked to their professional exposure to traumatic situations. The adoption of a preventive approach appears to be a key element in reducing the incidence of this disorder.

Keywords: Post-traumatic stress disorder, firefighters, mental health