Translated article [1]
Accepted: 10 September 2025

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Mate Ujević and the Croatian Encyclopaedia

Abstract

This paper examines Mate Ujević's contributions to the publishing of encyclopaedia publishing, focusing on the *Croatian Encyclopaedia* and the collection *Knowledge and Joy*. It explores Ujević's editorial principles, his commitment to the application of scientific principles, and his ability to foster collaboration across political and cultural divides under restrictive political conditions. This paper highlights how Ujević incorporated progressive scientific theories, such as Einstein's relativity and Darwinism, at a time when such ideas were widely suppressed in Europe. By analysing selected entries, the paper demonstrates the Croatian Encyclopaedia's dual purpose: as a cultural achievement of national significance and as a vehicle for preserving scientific autonomy. Despite political challenges, Ujević maintained editorial independence, establishing the Encyclopaedia as a project with significance in Croatia and beyond.

Keywords: Mate Ujević, *Croatian Encyclopaedia*, encyclopaedic collection, *Knowledge and joy*, natural history, science, Einstein's theory of relativity, Darwinism.

1. Introduction

In the extensive and varied oeuvre of Dr Mate Ujević, his exceptional contribution to the encyclopaedic tradition stands out most clearly through the founding and development of the *Croatian Encyclopaedia*, a project of

[1] This translated, revised, and adapted article was first published in Croatian in *Mislima i pogledima s harnošću Mati Ujeviću (1901–1962)* (Zagreb: Hrvatska sveučilišna naklada, 2023, pp. 23–57) and is republished here for its cultural and historiographical importance with permission from the publisher.

lasting significance for Croatian culture. Over the course of three decades of continuous activity, Ujević edited and published a series of representative encyclopaedic and lexicographic works of national importance. Between 1938 and 1950, despite highly complex and unfavourable political and material circumstances, he initiated large-scale encyclopaedic projects on three separate occasions, serving as their central *spiritus movens*. He succeeded in gathering established scientists and experts from diverse fields, bringing together intellectuals of different political orientations, social positions, and professional backgrounds. The result was a series of publications of European stature, with the *Hrvatska enciklopedija* (*Croatian Encyclopaedia*) as the central undertaking, accompanied by retrospective and specialised encyclopaedias, authoritative reference books, and other publications that have become seminal or highly influential texts within the fields of Croatian culture and science.

Having assembled a group of collaborators and editors, Ujević established the Croatian Encyclopaedia Consortium in late 1938 and early 1939. Preparatory work began soon thereafter, and he remained active within the Consortium until 9 August 1941. Following the political changes of that year, the Consortium was reconstituted as the Croatian Publishing and Bibliographic Institute (Švab, 1992), with legal authority granted by the Head of State of the Independent State of Croatia, Ante Pavelić, and approval from the Minister of Education and Religious Affairs, Mile Budak. In less than four years, the Institute's thirty-three publishing divisions produced 132 books (Tijan, 1980; Dadić, 2020b). According to contemporary sources, at the time of its dissolution, the Institute had a further 129 titles in various stages of completion (Švab, 1992). This record is documented in Ujević's *Survey on the Croatian Publishing Bibliographic Institute* (*Elaborat o Hrvatskom izdavačkom bibliografskom zavodu*), signed on 18 May 1945 (Švab, 1992).

Among the Institute's diverse publications in Croatian and world literature, history, and culture, the *Croatian Encyclopaedia* remained its most important achievement. The first volume was prepared and published under Ujević's editorship during the period of the Autonomous Banovina of Croatia, which at that time was a political entity within the Kingdom of Yugoslavia. Equally significant from the perspective of the history of science was the encyclopaedic collection *Science and Joy* (*Znanost i radost*), published during the Second World War. In this series, Ujević

enlisted leading scientists working in Croatia at the time to contribute texts across a wide range of disciplines. Known also as the "Little Lexicon" in Ujević's work diaries, *Science and Joy* later served as the foundation for the *General Encyclopaedia* (Švab, 1992) of the Lexicographical Institute, developed in its second edition after the war.

This paper will examine selected texts in the fields of natural history and mathematics from both the *Croatian Encyclopaedia* and *Science and Joy*. Particular attention will be given to contributions that introduced contemporary scientific theories and discoveries, such as Einstein's theory of relativity, abstract mathematical fields, radioactivity, quantum theory, and Darwin's theory of evolution. Notably, many of these theories were controversial at the time; in parts of Europe, they were either prohibited outright or became grounds for political persecution. Their inclusion in Ujević's projects thus not only reflects the high level of scientific engagement of Croatian intellectuals during this period but also highlights the broader cultural significance of encyclopaedic work as a vehicle for disseminating knowledge under challenging historical conditions (Dadić, 2010, 2020a, 2020).

2. Genesis of the encyclopaedic project

In 1938, guided by his intellectual breadth and erudition[2], Mate Ujević conceived the idea of launching a multidisciplinary encyclopaedic project. By that time, he had already gained editorial experience through his work with several literary and cultural journals, as well as through the publication of several books[3]. Among these, *Croatian Literature: A Survey of Croatian Writers and Books* (*Hrvatska književnost: Pregled hrvatskih*

[2] Based on the classical education he began at the Franciscan High School in Sinj, Ujević continued his studies at the Classical High School in Split and later at the Faculty of Philosophy in Zagreb, where he pursued Yugoslav literatures, comparative literature, history, and the history of fine arts. He subsequently obtained his degree in Ljubljana, specialising in Yugoslav literatures, Croatian language, Old Church Slavonic, French, and folk history. Fluent in several world languages and having refined his Slavic education with an extensive knowledge of history, political history, legal history, and maritime history, he completed his doctoral dissertation *Jovan Hranilović: Contribution to the History of Croatian Modernism* (*Jovan Hranilović. Prilog za povijest hrvatske moderne*), which he defended on 31 May 1935 at the Faculty of Philosophy in Zagreb.

[3] Ujević's creative biography began during his high school years, when, together with Bogdan Radica, he founded the literary and cultural revue *Renaissance*.

pisaca i knjiga; 364th volume of the Jeronim's Library, Zagreb, 1931/32) is particularly noteworthy, as certain features of this work already pointed to his interest in publications that provide a comprehensive body of reference information, such as encyclopedias. This was later developed into the idea of a comprehensive national Encyclopaedia (Švab, 1992).

The 1930s were an especially difficult period for Croatian culture, science, and society. The restrictive political climate, particularly during the era of absolutism in Croatia, made Ujević acutely aware of the need to create major works of Croatian culture that could present national values in a European and global context in a professional, scholarly, and objective manner.

The financial foundations of the project were provided by Dragutin Stjepan Schulhof, the majority owner of *Tipografija d.d.*, who had independently envisioned publishing a twelve-volume *Croatian Encyclopaedia* (Švab, 1992). With the necessary funding secured, Ujević gathered a circle of collaborators in early 1939 and initiated intensive work on the Encyclopaedia. The establishment of the Autonomous Banovina of Croatia on 26 August 1939 further improved the political climate, which until then had been markedly unfavourable for Croatian society and culture. What had begun as a private initiative gradually came under the state's patronage, acquiring the status of a national project of significance. Shortly after the formation of the Banovina, Viceroy Ivan Šubašić, in agreement with Croatian Peasant Party leader Vladko Maček and at the suggestion of Rudolf Herceg, approved a loan from the Banovina's Savings Bank, which secured continued financial support for the development of the *Croatian Encyclopaedia*[4] (Švab, 1992).

3. Structure and Conception of the *Croatian Encyclopaedia*

The Banovina authorities offered full support to Ujević's encyclopaedic project. By official decree, Mate Ujević was appointed editor-in-chief of

[4] At that time, the formal ownership of the *Croatian Encyclopaedia* was defined. A special consortium was established, represented by Rudolf Herceg and Dragutin Schulhof. According to a contract, the consortium renounced any profit; should any net profit arise, it was to be used for publishing an encyclopaedic work on Croatian folk life in foreign languages. Once the invested funds had been reimbursed to Dragutin Schulhof and Mate Ujević, the *Croatian Encyclopaedia* became public property, and no individual retained a financial stake in it.

the *Croatian Encyclopaedia*, assisted by an editorial board composed of university and secondary school professors. Among them, Gustav Šamšalović was particularly important, as his experience as editor-in-chief of the *Minerva Lexicon* (Zagreb, 1936) proved invaluable in shaping the conception and chronological sequencing or ordering or entries for the *Croatian Encyclopaedia*. Initially, the plan was for the *Croatian Encyclopaedia* to follow the German encyclopaedic and lexicographic tradition (*Meyer* and *Brockhaus*), which featured a vast number of shorter entries. The first abecedary included as many as 240,000 entries (Švab, 1992). However, this approach soon encountered difficulties due to the structural specificities of the Croatian language. In preparation for the project, Ujević studied all major European encyclopaedic models.

During his stay at the *Giovanni Treccani Institute*, he became acquainted with the working methods of the *Enciclopedia Italiana*, which had a decisive influence on his approach. Unlike the German model, the Italian Encyclopaedia contained fewer entries but treated them exhaustively. Inspired by this method, Ujević envisioned the *Croatian Encyclopaedia* as a synthesis of the two traditions (Švab, 1992). The initial abecedary was reduced by three-quarters, resulting in approximately 60,000 entries. By combining extensive, original-authored, and review-like articles with shorter lexicographic entries, Ujević successfully developed a distinctive encyclopaedic model that merged breadth with depth.

The *Croatian Encyclopaedia* was first presented to the public in spring 1940 with a published representative sample instalment of about seventy pages. This preview announced a planned twelve-volume edition [5], each of approximately 800 pages, with two volumes to be published annually [6]. The first instalment set out the conceptual framework of the Encyclopaedia, provided a schematic overview of the covered disciplines, listed the professional editors, and included sample entries, as well as a historical survey of encyclopaedic traditions up to the mid-twentieth century. Statements of support from *Ban* Ivan Šubašić, Zagreb Archbishop

[5] Although the sample initial instalment announced a 12-volume set to subscribers, the completion of the first, more extensive volume led to a projected total of 16 volumes. Following the release of the fifth volume, based on the scope of the material at that time, it became evident that the entire *Croatian Encyclopaedia* would ultimately comprise 20 volumes.

[6] A sample instalment was published as part of an intensive publicity campaign by the editors, aimed at engaging 6,000 subscribers and thereby securing funds to finance the entire publishing project.

Aloysius Stepinac, and the leading Croatian politician at that time, Vladko Maček, were provided, which recognised to the project's broad social importance and its status as a cultural achievement of national standing.

4. The role, goals and motives of starting the Croatian Encyclopaedia – Ujević's reflections from a Croatian perspective

Ujević directly connected the *Croatian Encyclopaedia* to the culture and history of Croatia, considering it meaningful only if it critically interpreted and legitimised Croatian values in a manner recognised at both European and global levels. He conceived the project simultaneously as an endeavour to secure European recognition and as an act of cultural and national emancipation in relation to neighbouring countries, which historically had expressed varying territorial claims and often acted detrimentally towards Croatians. Ujević noted that his publishing venture, initiated at the onset of the Second World War, was motivated firstly by considerations of national defence and secondly by cultural imperatives.

Through his travels abroad and close familiarity with foreign media coverage about Croatia and South Slavs in general at the time, particularly that in Italy, Germany, and Hungary, as well as their national literatures, he observed how foreign writers systematically omitted or misrepresented Croatian achievements and values. To counter this pervasive external narrative, he deemed it essential to situate Croatian national life and cultural claims within a European and global context—a goal achievable only through the creation of an encyclopaedic work. Ujević emphasised that the project was intended above all to present an accurate portrayal of Croatian life, society, and culture, of both the past and the present, in relation to the wider world. As the initiator and editor-in-chief, he sought to provide a comprehensive cross-section of contemporary Croatian cultural reality, grounded in the broadest possible freedom and independence for collaborators and editors.

5. Chronology of work and dynamics of publication of volumes of the *Croatian Encyclopaedia*

Ujević began preparing the first volumes of the *Croatian Encyclopaedia* during the period of the Autonomous Banovina of Croatia. At the start of 1941, as the Second World War commenced, the Croatian Encyclopaedia

Consortium published the first volume. With the onset of war and a change of government after the establishment of the quisling Independent State of Croatia (ISC), the Consortium was reorganised and renamed the Croatian Publishing Bibliographic Institute, operating from early August 1941 as a state enterprise tasked with publishing works of encyclopaedic and bibliographic significance. Mate Ujević was appointed manager, a role he held until the end of the war, with Dragutin Tadijanović serving as secretary. Among the Institute's numerous wartime publications, the production of the *Croatian Encyclopaedia* was considered its primary task (Tijan, 1980)[7], with Volumes II–V completed and published during the conflict.

The first volume, completed on 10 February 1941, contained 808 pages covering entries from *A* to *Automobil*. It included a preface by Ujević, followed by lists of professional editors and authors with their initials. The second volume, printed before the escalation of military activities, was completed on 20 December 1941, encompassing 728 pages under the entries *Autonomaši* to *Boito*. The third volume, spanning 800 pages, covered entries from *Boja* to *Cliveland* and was completed on 21 October 1942.

The fourth volume, comprising 776 pages and covering *Cliachit* to *Diktis*, listed 1942 as its year of publication, though printing likely concluded in mid-1943. Evidence for this can be found in publication dates of reviews in the daily press, separate editions of texts, and entries containing data from 1943, such as the Danish elections of 23 March 1943. The omission of a precise printing date and the reference to 1942 reflect practical considerations: publication schedules had become untenable, and the adoption of a new spelling system[8] in January 1943 necessitated adjustments to avoid extensive reproofing.

[7] The Croatian Publishing Bibliographic Institute had a total of 33 active editorial offices, i.e. 33 editorial departments. Among the major editions, work was done on the *Croatian Encyclopaedia*, the encyclopaedic collection *Knowledge and Joy*, the *Dictionary of the Croatian Literary Language*, and the large *Maritime Lexicon* in 4 volumes: on the bibliography and a whole series of books and journals. Many works of Croatian writers and works from Croatian culture and history were published. A *Dictionary of the Croatian language* was intensively prepared at the Institute, but this great work was not completed during the war, so the dictionary was not published.

[8] *Implementation Order to the Legal Provision on the Croatian Language, on Its Purity and on Orthography*, 14 August 1944, pp. 19–24, Croatian State Language Office, Zagreb, 1942. This Order was issued by the Ministry of Education based on a proposal

The fifth and final published volume, dated 2 May 1945, comprised 738 pages covering *Dilatacija* to *Elektrika*. It was the only volume in which Ujević could not fully avoid censorship and the newly introduced spelling system that was based on etymological as well as phonetic considerations. orthography. From August 1941, the Croatian Publishing Bibliographic Institute, under the Ministry of Education, was not subjected to direct censorship, allowing Ujević to maintain editorial independence and supervise the comprehensive work of the Encyclopaedia. Under his leadership, the Croatian Encyclopaedia provided an objective, professionally grounded, and scholarly-based account of contemporary Croatian culture, critically interpreting national and universal values and legitimising them in a European and global context.

Despite these achievements, postwar politics and ideology marginalised the *Croatian Encyclopaedia*. As Švab (1992: 16) notes:

> "The Croatian Encyclopaedia has never fared particularly well in reviews of encyclopaedic and lexicographic efforts in the Croatian and South Slavic areas; barely 10–15 lines were dedicated to it. The fact that four out of the five volumes were published during the war gave it an unjustified Ustasha label. [...] Anyone familiar with work on encyclopaedias understands the time, effort, and organisation required to publish even one volume. When a nation undertakes such a complex and sustained project as the Croatian Encyclopaedia, the results should be regarded with due respect."

According to the literature, Volumes I–IV were largely prepared before the war, with wartime publications refining and redacting articles (Dadić, 2020; Švab, 1992), as evidenced by non-standard spelling conventions found in Volumes III and IV. Regardless of prior preparation, the fact that these texts were published during the war within a government-financed state institute is significant, reflecting the editors' and authors' relative freedom in relation to official state ideology. After the war, the Communist

from the Croatian State Language Office on 27 June 1942. The relatively late standardisation and formalisation of a morphophonological, i.e., etymological orthography in the Independent State of Croatia resulted from the fact that the attempts by three authors—Franjo Cipra, Petar Guberina, and Kruno Krstić—to establish a phonological orthography based on the Banovina Boranić system were halted. Work on their orthography was suspended. The proofs were destroyed, and some collaborators were expelled from the Language Office.

government of the newly formed Federal People's Republic of Yugoslavia halted further work on the encyclopaedia. In addition to the recently published fifth volume, the sixth volume had been editorially completed but remained unpublished following the Institute's dissolution by the Communist government in 1945 (Dadić, 2020). Ujević attempted to preserve the project, documenting it in a special report dated 18 May 1945, but these efforts proved fruitless[9]. Most copies of the fifth volume were destroyed, with only a small number preserved through distribution or collection by the National and University Library in Zagreb.

6. Organisation of encyclopaedic work

Striving for a high level of quality and a broad professional and scientific scope, Ujević selected collaborators free from political or ideological influence, and guided solely by principles of their academic reputation. Over his long creative and professional life, spanning more than thirty years and multiple changes of government, he managed to launch a complex encyclopaedic project three times despite adverse circumstances. The work on the *Croatian Encyclopaedia*, initiated during the Kingdom of Yugoslavia, continued and developed after Croatia gained autonomy within the Kingdom as the Banovina of Croatia, and its continuity was maintained even throughout the Second World War under the Independent State of Croatia. During this period, the Institute's activities expanded significantly, which occurred on the basis of the realisation that this project was of critical importance for the survival and continuing identity of the Croatian people.

With the end of the war and the establishment of the Communist government, Ujević's efforts to maintain the encyclopaedic series were halted, and the Institute was abolished. Nevertheless, driven by perseverance and a deep commitment to Croatian culture, Ujević resumed work in other institutions, continuing several projects of exceptional

[9] Mate Ujević, *Croatian Publishing Bibliographic Institute*, Zagreb, 18 May 1945, published as Attachment 1 to Švab, "Ujević," in *Works of the Lexicographical Institute*. Ujević outlines the structure and activities of the Institute at the end of the Second World War, immediately before its abolition in July 1945. At that time, the Institute comprised 33 editorial departments and was engaged in work on the sixth volume of the *Croatian Encyclopaedia*, the fourth volume of the encyclopaedic collection *Knowledge and Joy*, the *Dictionary of the Croatian Literary Language*, the four-volume *Maritime Lexicon*, and the *Bibliography of Books and Journals*.

cultural importance. These included the *Maritime Lexicon* (*Pomorski leksikon*), which evolved into the *Maritime Encyclopaedia* (*Pomorska enciklopedija*); *Knowledge and Joy* (*Znanost i radost*), which later developed into the *Encyclopaedia of the Lexicographical Institute* and, in its second edition, the *General Encyclopaedia* (*Opća enciklopedija*); and the *Bibliography and Lexicon of Fine Artists* (*Leksikon likovnih umjetnika*), expanded into the four-volume *Encyclopaedia of Fine Arts* (*Enciklopedija likovnih umjetnosti*). Despite these achievements, Ujević was unable to preserve the *Croatian Encyclopaedia* in its original form [10].

Ujević considered that given its scope and complexity, encyclopaedic work, required organisational infrastructure for the level of quality to be maintained. Following the cessation of activities caused by the abolition of the Croatian Publishing Bibliographic Institute, he sought to resume work as soon as possible. In 1947, he obtained institutional support at the newly established Adriatic Institute of the Yugoslav Academy of Sciences and Arts, where he initiated the *Maritime Lexicon* project, later realising it as the *Maritime Encyclopaedia* [11]. By the end of 1950, he moved to the newly founded Lexicographic Institute, where he continued previously started encyclopaedic projects and editions that formed the foundation of the Institute's work for many years. From the launch of the *Maritime Encyclopaedia* until his retirement, Ujević carried out editorial duties over a sustained and productive period of approximately twenty years,

[10] The change of government briefly interrupted Ujević's encyclopaedic activity. By decision of the newly established Communist authorities, publication of the *Croatian Encyclopaedia* and work on all other encyclopaedic editions were suspended. The Croatian Publishing Bibliographic Institute was reorganised and renamed the Publishing Institute of Croatia, with a reduced scope of work focusing primarily on literary publications. Šime Balen was appointed head of the Institute, while Ujević assumed the role of economic secretary and technical editor of the newly established institution.

[11] The genesis of the project dates to an earlier period when, following Italy's capitulation and on the eve of Italy, Ujević prepared publications that affirmed the Croatian affiliation of the eastern Adriatic coast and its maritime orientation. Subsequently, the Croatian Publishing Bibliographic Institute published *Prošlost Dalmacije* (The Past of Dalmatia) by Grga Novak and *Dalmatinsko pitanje kroz vrijeme* (The Dalmatian Question through Time) by Stjepan Antoljak, and preparations commenced for the *Maritime Library* (*Pomorska knjižnica*), from which several editions were issued. Concurrently, work began on the *Maritime Lexicon* (*Pomorski leksikon*), a four-volume project modelled on the format of the *Croatian Encyclopaedia*. Several editors and collaborators of the *Maritime Lexicon*, including Petar Mardešić and Vladislav Brajković, were later incorporated by Ujević into the development of the *Maritime Encyclopaedia* (*Pomorska enciklopedija*).

overseeing the realisation of several encyclopaedic editions that he had conceptualised during his work on the *Croatian Encyclopaedia*. In the summer of 1950, he made another attempt to continue the *Croatian Encyclopaedia*, but this effort did not succeed under that title or according to his original conception. In contrast, the *Maritime Lexicon*, which he had successfully developed, was fully realised as the *Maritime Encyclopaedia*, and was ultimately published in two eight-volume editions (Švab, 1992).

Ujević also continued work on the encyclopaedia series *Knowledge and Joy*, which was first entitled the *Encyclopaedia of the Lexicographical Institute* and subsequently the *General Encyclopaedia* in its second edition (Švab, 1992). He further developed the *Lexicon of Fine Artists* into a four-volume *Encyclopaedia of Fine Arts* at the Lexicographic Institute (Švab, 1992). These projects demonstrate that the fundamental works and publications of the Institute were conceptualised by Ujević long before its official establishment.

In addition to his editorial responsibilities, Ujević contributed as an author to many encyclopaedic editions. In the first published volume of the *Maritime Encyclopaedia*, which was also the first volume produced by the Lexicographic Institute, he authored several entries drawn from the Spanish and, to a lesser extent, the French cultural sphere, providing paradigms for the *Maritime Encyclopaedia*. His participation in the *Encyclopaedia of Yugoslavia*, where he served as deputy editor-in-chief, was of a different nature, focusing on literature, literary journals, bibliographies, and topics relating to cultural and political issues within the Catholic Church.

7. Principles of producing encyclopaedic editions

Guided by the ideal that leading scientific and cultural works must remain free from the influence of politics and ideology, Ujević consistently selected academic and research collaborators with expertise in their specific areas of work throughout his long career, irrespective of their political orientation or social status. These intellectuals were united by a shared commitment to the nation's need for encyclopaedic works and by a deep respect for the universal value of science and culture.

Before the publication of the first volume, he delivered lectures and interviews outlining the objectives and principles of the *Croatian*

Encyclopaedia. In the sample sheet and the Preface to the first volume, Ujević (1942: VIII) wrote:

> "We want our Encyclopaedia to be first and foremost Croatian, that is to say that it pays particular and more extensive attention to Croatian conditions, and then to the conditions of closer, related peoples, while it will show the conditions and characteristics of distant peoples more succinctly and concisely. We want the Croatian Encyclopaedia to represent our contribution to the advancement of science and culture in general, and, in this way, the nation as a whole and individual cultural creators will be brought to the fore."

He further emphasised:

> "As far as the collaborators are concerned, I adopted an approach which I consider correct in that I believed that all our experts must collaborate in the Croatian Encyclopaedia, regardless of their political, cultural, or social views. Is rare to find elsewhere in the entire world that people with opposite views have been assembled to participate in the same project." (1940: 40)

Ujević envisioned the *Croatian Encyclopaedia* as "the best way to advance the expansion of knowledge, and as the strongest defender of our national consciousness," and accordingly, its scope covered a broad range of thematic areas. The representation of disciplines reflected this purpose: literature was the most extensively represented at approximately 12%, followed by technology, medicine, and economics at 6%, with philosophy, ethnology/ ethnography, law, religion, and music at around 2.5%, and mathematics, physics, chemistry, astronomy, botany, and zoology at 2% (Švab, 1992) [12].

[12] The *Croatian Encyclopaedia* featured a significantly expanded coverage of national topics. At the same time, South Slavic topics were more prominently represented due to the degree of connections with other areas. For Slovenian, Serbian, Slovak, Bulgarian, and other selected regional topics, editors were appointed who independently selected authors for the texts and entries within their respective sections of the. In addition to the stated proportional representation of professions, the structure, distribution, and relationship of national versus general topics, according to Pavle Tijan, was maintained at a ratio of 1:3.

Given the scope of both the encyclopaedia and of Ujević's other edited publications and the wide range of collaborators involved, this article is unable to devote great detail to all of them individually. This study, therefore, focuses on selected entries in the natural sciences, which exemplify key features of Ujević's editorial and encyclopaedic approach. These entries illustrate how, even amid the constraints of the Second World War and the policies of the totalitarian regimes in power at the time, the *Croatian Encyclopaedia* maintained a rigorous commitment to scientific facts and editorial freedom. Extensive authorial entries, although not representative of the most frequently covered topics, were crucial in demonstrating the Encyclopaedia's reach and intellectual ambition.

8. Ujević's associates – The Croatian intellectual elite

Ujević assembled leading experts and members of the Croatian intellectual elite of the time as editors for specific fields and collaborators on the creation of texts. He selected them not only for their cultural and scientific contributions but also as independent bearers of new knowledge and progressive scientific theories—ideas that, in certain regimes at the time, were rejected, prohibited, or punished with imprisonment, persecution, and even death. For example, in Nazi Germany, Einstein's theory of relativity was rejected and its proponents severely punished, while in the Soviet Union, abstract mathematical and physical theories deemed incompatible with dialectical materialism were banned, with their followers were subjected to punishment, exile to Siberia, or execution (Dadić, 2010).

According to Ujević's vision, professional editors exercised full autonomy in deciding on entries within their field, determining the scope of material, and selecting authors. The list of professional editors, printed in the first pages of the *Croatian Encyclopaedia*, demonstrates that Ujević engaged the most eminent experts available. Editors for general and national literature included Josip Badalić, Antun Barac, Julije Benešić, Mirko Deanović, Franjo Fancev, Petar Skok, Gustav Šamšalović, and Josip Torbarina, with Stjepan Ivšić responsible for Croatian and other Slavic languages. Croatian history was overseen by Stjepan Antoljak, Miho Barada, and Antun Dabinović, and general history by Ljudmil Hauptmann and Grga Novak. Historical sciences and numismatics were edited by Josip Nagy; archaeology and classical antiquities by Viktor Hoffiller; art history

by Artur Schneider; cultural history and artistic crafts by Gjuro Szabo and Vladimir Tkalčić; ethnology, ethnography, and anthropology by Milovan Gavazzi; and Oriental Studies by Hamdija Kreševljaković. Jewish studies were overseen by Lavoslav Šik; Slavic studies by Jože Glonar; Serbian studies by Milan Budimir; Italian literature by Mirko Deanović; Anglo-Saxon literature by Josip Torbarina; theatre by Nikola Andrić and Slavko Batušić. Philosophy was edited by Albert Bazala and Stjepan Zimmermann; medicine by Drago Perović, Ante Šercer, and Andrija Štampar; law by Juraj Andrassy; physics by Stanko Hondl; mathematics by Rudolf Cesarec; chemistry by Vladimir Deželić and Stanko Miholić; technology by Đuro Stipetić; maritime affairs by Aleksandar Primožić; pharmacognosy by Antun Vrgoč; botany by Ivo Horvat; astronomy, geophysics, and meteorology by Stjepan Škreb; aeronautics, and the armed forces by Armin Pavić and Slavko Pavičić; mineralogy, mountaineering, and sport by Fran Kušan; zoology by Krunoslav Babić; pedagogy and education by Sigismund Čajkovac; sociology and statistics by Dinko Tomašić; and agriculture by Mihovil Gračanin.

By selecting such a network of professional editors and collaborators, Ujević ensured that the *Croatian Encyclopaedia* produced texts of the highest professional, scientific and scholarly quality. While it is impossible to list all contributors due to their sheer volume, it is evident that almost all leading Croatian scholars of the time participated, enjoying editorial freedom to present positions aligned with current opinions and interpretations in respective fields. Notably, the first volume, printed for the Banovina of Croatia before the establishment of the Independent State of Croatia and the establishment of the Croatian Publishing Bibliographic Institute (*Hrvatski izdavački bibliografski zavod*), remained editorially consistent with subsequent volumes.

Despite the change in government at the onset of the Second World War, the same contributors remained engaged, and most editors and authors of the first volume continued their collaboration in subsequent volumes. This included contributors of various nationalities and political orientations. In the preface to the first volume, Ujević (1941: IX) emphasised that the *Croatian Encyclopaedia* united intellectuals regardless of political beliefs:

> "The unbiased spiritual efforts of all our recognised experts, to find the essential elements of the Croatian spirit, will bring together Croatian intellectuals without differences in views and opinions in one collective and reputable publication […] In this

> way, the Croatian Encyclopaedia will contribute its share to strengthening the spiritual harmony of the Croatian people and setting cultural work on solid foundations, so that it reflects our national spirit, and will become not only a collection of knowledge about life and the world, but also a means of strengthening our culture and Croatian national consciousness."

He further stressed:

> "Throughout our endeavours, strict care is taken so that the work does not bear a particularistic slant from any side. The central editorial board wanted all our experts and writers to be represented as editors and collaborators. We can say without hesitation that such a broad and broad-minded assembling of reference publications is unprecedented n Croatian cultural history. Admittedly, there are some Croatian experts here and there who have chosen not to collaborate in the first volume, but that does not mean that they will not collaborate in subsequent volumes." (Ujević, 1941: IX)

The inclusive approach of having a wide of variety of contributing experts was maintained across all five volumes, including those published during the Second World War, as evidenced by the names of contributors. For example, the chemist Rikard Podhorsky, a prominent left-winger, collaborated on all volumes. An analysis of his contributions shows that he wrote with professional expertise and scientific rigour; his chemistry entries adhered to the universal principles of science and were free of ideological bias. Other left-wing contributors, such as Tomislav Pinter, participated in selected volumes.

The list of contributors clearly demonstrates the *Croatian Encyclopaedia*'s openness to experts of various beliefs and ethnicities throughout the war period. In mathematics, for instance, alongside editor Rudolf Cesarec, two mathematicians, Đuro Kurepa, of Serbian nationality, and Vladimir Varićak, an adherent of the Greek Catholic faith with no declared nationality, prepared entries, while physicist Josip Goldberg, of Jewish origin, also contributed. Lavoslav Šik was appointed editor for Judaica in the *Croatian Encyclopaedia*. From the very first volume, he enlisted prominent Jewish collaborators such as Samuel Romano, Hink Gottlieb, Lavoslav Glesinger, and Rudolf Buchwald, with senior rabbi Gavro

Schvartz participating on the Judaica editorial board. Upon the release of the first volume, Šik emphasised:

> "In the *Croatian Encyclopaedia*, it will be the first time that Jews are presenting, to a wider, general readership, everything that is important and interesting for them to know about Jewish issues, in particular all things that they consider good, beautiful and significant that have been created by Jews in Croatia and throughout Yugoslavia." (Šik, 1940: 164-165, in Švab 1992: 18)

To ensure high-level coverage across all fields, Ujević also appointed professional editors for foreign countries, nations and cultures, with collaborators working in Athens, Bratislava, Budapest, and Sofia (Švab, 1992).

9. Scientific theories and attitudes represented in the texts of the Croatian Encyclopaedia

The excellence of the *Croatian Encyclopaedia* lies not only in the breadth of entries included but also in the authors' treatment of individual terms and topics, and in the comprehensiveness and quality of the published articles. From the perspective of freedom of scientific opinion, the entries that testify to the universal character of science are particularly interesting. These reveal that contributors engaged freely with diverse topics in accordance with contemporary scientific developments, even when addressing theories that were ideologically controversial at the time.

Although only five volumes of the Croatian Encyclopaedia were published, it is possible—through an analysis of selected texts—to reconstruct the positions of its authors in the natural sciences towards controversial and current scientific topics.

Among the natural science entries that explicitly mention the theory of relativity, three stand out: *Albert Einstein*[13], *Einstein–de Haas Effect*[14], and *Equivalence of Mass and Energy*[15]. All appeared in the fifth volume

[13] *Hrvatska enciklopedija*, sv. V., 1945: 624–626.
[14] *Hrvatska enciklopedija*, sv. V., 1945: 626.
[15] *Hrvatska enciklopedija*, sv. V., 1945: 668–669.

(1945) and were authored by the physics editor Stanko Hondl, a physicist and supporter of Einstein's theory [16].

In the *Albert Einstein* entry, Einstein's biography, scientific achievements, and honours are outlined, followed by an explanation of the essential features of his most significant theories, which are presented as indisputable and widely accepted within the scientific community. Hondl refers to Einstein's theories of relativity as unquestionable. The entry highlights what the author considered Einstein's most important contributions, including his research in quantum theory (specific heat, radiation, Bose–Einstein statistics), his interpretation of Brownian motion, the photoelectric effect, and the principle of relativity. Beginning with the concepts of absolute space, time, rest, and motion, Hondl first describes Einstein's special theory of relativity. Interpreting its basic assumptions, he wrote:

> "Einstein's criticism of the idea of absolute simultaneity is perhaps more surprising at first than all other claims about space and time. It brings down a perception to which we are so accustomed, and we are willing to take it as self-evident, that we can hardly escape from it. It is no wonder that such an approach to science initially met with doubts and even fierce opposition, although its internal logic could not be denied. Resting on simple assumptions, it destroys certain overly simple perceptions that are difficult for us to abandon, yet it harmoniously explains a number of fundamental experiential facts that could not be understood before the theory of relativity. On top of that, the special theory of relativity leads to the foreboding realisation that mass and energy are the same, a fact later brilliantly confirmed in atomic physics. Today, doubts about the special theory of relativity have been silenced, and the principle of relativity is considered an "experiential fact." (Hondl, 1945: 625).

Then, in the same entry, following the discussion of the special theory, Einstein's general theory of relativity is presented, which extends beyond the consideration of inertial systems. Hondl interprets this as both a theory

[16] Hondl had accepted Einstein's special and general theories of relativity well before. He referred to them in his textbook *Fizika za više razrede srednjih škola* (*Physics for Upper Secondary School Classes*), published in Zagreb in 1922, and again in a 1929 paper titled *Pogledi suvremene fizike* (*Views of Contemporary Physics*), *Radovi JAZU*, vol. 236, Zagreb, 45–98.

of gravitation and the first convincing attempt to explain Newton's conception of attraction from simple foundational assumptions, primarily the principle of relativity. He writes:

> "It is the incomprehensible action at a distance—the stumbling block of Newton's science—replaced by the science of the gravitational field, which represents a comparable scientific advance to that which electromagnetism owes to Faraday and Maxwell." (Hondl, 1945: 626)

Hondl further observes that ordinary Euclidean geometry does not apply to the space–time dimension, which he describes as non-Euclidean, with properties determined by the distribution and velocities of celestial bodies. He notes that, although the general theory of relativity had not yet reached a definitive form, it already demonstrated significant explanatory power and had "enriched science with new views of the greatest scope." The discussion concludes with an assessment of the theory's broader implications:

> "Notably, it became the basis of new considerations about the world, its shape, size and development. Its strength lies in its internal harmony and in the simplicity of the assumptions on which it is built." (Hondl, 1945: 626)

The entry ends with a brief historical overview of the development of the idea of relativity from the seventeenth to the twentieth century, emphasising Einstein's pivotal role in advancing modern physics:

> "It is a great merit of Einstein, that in this most important field, he paved the way for scientific progress." (Hondl, 1945: 626)

Taken together, Hondl's treatment demonstrates a consistent commitment to scientific objectivity. He presents Einstein's contributions—ranging from the photoelectric effect to the special and general theories of relativity—as firmly embedded in accepted science, without reference to the political circumstances of the time, including the prohibition of relativity in Germany and the attacks directed against Einstein as a Jew. In the same spirit, Hondl also authored related entries such as *The Einstein–*

De Haas Effect[17] and *Equivalence of Mass and Energy*[18], both of which reinforced his neutral and scholarly engagement with Einstein's theories.

Apart from relativity, which provoked intense debate in the Croatian scientific community between the two world wars, another major source of controversy was Darwin's theory of evolution. From the late nineteenth century through the first half of the twentieth century, Darwin's theory became a focal point of ideological struggle. On the eve of the Second World War, the influence of politics and ideology on science and culture grew markedly, with totalitarian regimes seeking to subordinate scientific knowledge to political ends. In Nazi Germany, alongside attacks on relativity, Hitler's ideologues rejected evolutionary theory, advancing instead a racial doctrine that posited the eternity of species and, above all, the superiority of the German-Arian race.

A close examination of the Croatian Encyclopaedia entries on race reveals, however, that its authors consistently adopted positions grounded in scientific evidence and independent of political or ideological manipulation. The entry on Charles Robert Darwin, published in Volume IV and authored by Krunoslav Babić, illustrates this stance. In addition to Darwin's biography, Babić provides a clear and balanced account of Darwin's theory of the development of living beings (Babić 1942). His treatment is explicitly scientific and objective, presenting Darwinism as a generally accepted theory, and noting:

> "Natural selection ensures that the organism best adapted to its environment survives, and this process of natural selection is the primary driver of the development of living beings. Darwin's theory of evolution traces the path through which the transformation and improvement of living beings occurred and continues to occur. […] According to Darwin, different paths of adaptation lead to gradual changes and ultimately to the emergence of new species" (Babić, 1942: 558).

At the end of the entry, Babić discusses the reception of Darwin's theory of evolution and mentions Darwin's contemporary, the German natural scientist Ernst Haeckel, who made significant contributions to the

[17] *Hrvatska enciklopedija*, sv. V, 1945: 626.
[18] *Hrvatska enciklopedija*, sv. V, 1945: 668–669.

affirmation of Darwin's theory in the second half of the nineteenth century. Babić concludes the entry *Charles Robert Darwin* with the words:

> "Darwin is considered the 'father of modern zoology.' His science of the origin of species and the theory of selection and descent strongly influenced further scientific research. Some consider him the 'Copernicus of modern biology,' and others the 'Newton of biology,' because what the theory of gravity is to the inorganic world, it is the theory of selection to organic nature." (Babić, 1942: 558).

Babić concluded the entry with these words, emphasising Darwin's contributions to the ultimate affirmation of the theory of descent and the subsequent development of contemporary scientific research in zoology, botany, and geology (Babić, 1942).

In addition to the aforementioned text on Darwin, Krunoslav Babić also authored a related entry entitled *Descent Theory*. He defines it as:

> "(…) an independent branch of biology, the science of the development and transformation of living beings, transmutation, transformism, according to which all organisms on Earth have developed over many years from simple forms, and higher, more intricately and complexly built beings originate from lower, simpler ones that lived in previous eras of Earth's history." (Babić 1942: 675).

He continues:

> "Although the basic idea of descent was represented by many naturalists, Jean Lamarck, with his work *Philosophie zoologique* (2 vols., 1809), is the main founder of the theory of descent, which was supported by evidence and helped to reach general recognition by Charles Darwin." (Babić, 1942: 675–676.).

Babić (1942) then provides basic interpretations and presents evidence supporting the theory of descent.

Certain issues introduced in the entries *Darwin* and *Descent Theory* are further explored in the extensive entry *Man*[19], which is structured thematically into three units spanning a total of 42 pages and authored by

[19] *Hrvatska enciklopedija*, sv. IV., 1942: 335–376.

three contributors[20]. The entry *Man* (čovjek) fully reflects the authors' approach to the topics, demonstrating both the comprehensiveness and freedom of scientific thought.

The first and most extensive section, entitled *Man in Biological Sciences*, was written by the naturalist Boris Zarnik. In this section, Zarnik (Zarnik, 1942) interprets the position of humans in nature and their origins within the context of comprehensive research in anatomy, embryology, and paleoanthropology. Following Zarnik's evolutionist account, the entry presents a description of humans by the theologian Aleksandar Gahs (1942). Gahs' presentation differs from Zarnik's in its conceptual approach, distinguishing between the human body and soul and considering these aspects from a theological perspective. The final part of the entry was authored by the philosopher Albert Bazala (1942), who presents humans from a broader philosophical standpoint as both soul and spiritual being.

The text of the entry *Man* by Zarnik begins with a consideration of the origin of humans. He outlines the general framework of the problem, explaining that humans could not have arisen independently, but as part of the development of living nature, appearing in the final phase of that process. The introduction is thematically structured into several smaller units.

In the chapter *Biological Interpretation of Anatomical and Embryological Indications* (Biološko tumačenje anatomskih i embrioloških indicija), Zarnik (1942: 338) writes:

> "Since under the guise of the independent origin of man, for the aforementioned and similar phenomena in the structure and development of man, no interpretation is satisfactory, biological science increasingly leaned towards the understanding that man as a physical being was created by development from lower organisms in the sense of the descent theory, that man is of a common origin with other living beings, namely, that his lineage split off from the trunk whose other branches lead to those mammals, which are most similar to man, the apes." (Zarnik, as cited in Babić, 1942).

[20] In addition to its publication in the *Croatian Encyclopaedia*, the entry *Man* was also issued as a special booklet by the Croatian Publishing Bibliographic Institute.

To support this thesis, Zarnik presents arguments and evidence based on fossil findings, particularly skulls, tracing the development of humans in accordance with existing knowledge. His interpretation places particular emphasis on the factors underlying human origins and the context of human emergence.

The entry then devotes substantial attention to the origin of races. Zarnik begins by defining the concept of race and proceeds with a detailed discussion of racial origins and hereditary differences among humans. He concludes this section with the statement:

> "If each race is considered in relation to the environment in which it lives, then there can be no talk of 'lower' or 'higher' races, neither less nor more valuable, because each race has merged with its environment into a harmonious whole." (Zarnik 1942: 352)

Following this clear position on racial issues, the entry includes a chapter entitled *The Development of the Science of Human Races*, in which Zarnik provides a historical overview of relevant research and theories. He traces the study of races from their earliest representations on ancient Egyptian monuments and the first experiments at the end of the seventeenth century to the most recent work of anthropologist E. Eickstedt. According to Eickstedt, humans can be classified into three primary subspecies—Europoid, Mongoloid-Americanoid, and Negroid—each of which is further subdivided into series, races, and, in some cases, sub-races. The entry richly supplements this material with tables, illustrations, and photographic attachments. (Zarnik 1942: 352–355).

Within the chapter *The Development of the Science of Human Races* (Razvitak nauke o ljudskim rasama), Zarnik highlights a section entitled *Racial Theory*, in which he presents a clear and well-reasoned critique of racism. He writes:

> "Independently of the scientific study of races, a doctrine developed at the end of the last century, which we call racial theory or racism. The essence of racism is the belief that a certain race is the best and most capable, that it surpasses other races in terms of mental abilities, and that it is therefore 'chosen by God' to rule the world and determine the destiny of other races. There are different forms of racism, and in particular there is an extensive literature on Nordic racism […] but it has not been proven that one race is more valuable than another […] subjective

> factors cannot serve as a basis for determining the objective value of races. Indeed, exact science does not determine value at all; it merely observes existing phenomena and investigates their causes." (Zarnik, 1942: 355).

Arguing against racial theory, Zarnik (1942: 355) continues:

> "Racism strives, for the sake of the progress of culture, to preserve as pure as possible the race it considers the most capable. There are, however, facts that could be interpreted in the opposite sense: that precisely the mixing of some races speeds up the development of those mental forces that lead to cultural progress."

Zarnik then cites the views of prominent naturalists (Fischer, Kretschmer, Gerlach), who expressed opinions contrary to racial theory, and demonstrates—using examples such as the skulls of notable individuals including Leibniz and Schopenhauer—that racist claims are unfounded. He concludes the chapter with the statement:

> "From these and similar examples, it is clear that we are far from being able to directly link some specific mental traits and abilities with somatic racial characteristics, so that racist efforts have no support in the science of races." (Zarnik, 1942: 355).

The entry *Man* demonstrates that Zarnik enjoyed full freedom to articulate and publish his scientific views against racial theory within one of the most prestigious cultural projects in Croatia at the time. He was also not alone in the positions he advocated. As a biologist, he commanded considerable respect and support within the Croatian scientific community, as evidenced by the funerary address delivered by university professor and biologist Zdravko Lorković—brother of the former Ustaša minister Mladen Lorković—upon Zarnik's death in January 1945. The text of the speech was published in the journal *Priroda* 'Nature' (Lorković, 1945), providing enduring testimony to Zarnik's work and contributions to science.

10. The essence and meaning of the *Croatian Encyclopaedia*

The *Croatian Encyclopaedia* was a landmark achievement for Croatian culture, and the publication of each new volume was a major cultural event widely covered in the media. Numerous presentations, interviews, and reviews were devoted to it, among which the article by the scientist and

publicist Danijel Uvanović is particularly noteworthy. His article captures the essence and significance of the *Croatian Encyclopaedia*, comprehensively describing its most important features, which Ujević conceived and consistently implemented despite difficult circumstances, resulting in an edition of exceptional quality on a high international level.

In 1943, Uvanović published a highly laudatory review of the *Croatian Encyclopaedia* in the weekly *Hrvatski narod* (Uvanović, 1943). To emphasise the importance of such an edition for a nation, he first highlights the central role of culture and science in shaping national identity, including that of the Croatian nation. This, he notes, is precisely the purpose of the encyclopaedia as the largest project of its kind in Croatia, underlining the significance of its publication. Uvanović observes:

> "There is no such outstanding work in related literature that encyclopaedically covers the latest state and events on such a broad basis and deals with our Croatian issues in such a comprehensive manner as this encyclopaedia of ours." (Uvanović, 1943, p. 1).

He also stresses the primacy of scientific facts, which lie at the heart of the entire work:

> "Everything revolves around scientific truth; all the collaborators talk about it, because if there is no truth, there is no science either. The ultimate meaning of a scholar's life and all his actions is the discovery of truth and the essence of matter. If a scholar pursues something else, then he is not a man of science. This aspiration forms the fundamental form of the scholar's spiritual attitude, the inner ethics of his entire being. A scholar's love for the truth is a value that must be valued in society as well. The *Croatian Encyclopaedia* shows us that scientific work is not cold towards life and that science has something to say and advise the people from which it originates." (Uvanović, 1943, p. 2)

Uvanović concludes his article by noting:

> "The *Croatian Encyclopaedia* is a matter that concerns our entire national culture, paying tribute to it, and it is a travel guide for all of us that represents us in front of the entire cultural world." (Uvanović, 1943, p. 2)

11. Encyclopaedic collection *Knowledge and joy*

In addition to the *Croatian Encyclopaedia* and numerous other publications produced by the Institute during the Second World War, it is important to highlight the encyclopaedic collection *Knowledge and Joy* (*Znanje i radost*), which began publication in 1942. The Institute originally planned a ten-volume series, but by the time it was closed in 1945 only three volumes had been completed—released respectively in 1942, 1943, and 1944.

Despite Mate Ujević's commitment to preserving the Institute's projects and ensuring their continuity, the establishment of the communist government led to the Institute's abolition. Consequently, work on the fourth volume of *Knowledge and Joy* and other ongoing publications of the Croatian Publishing and Bibliographic Institute ended abruptly.

Although Ujević selected the editor-in-chief and contributors to *Knowledge and Joy* from among the authors who had already worked on the *Croatian Encyclopaedia*, the nature and purpose of the new series required a distinctly different approach. Conceptually, *Knowledge and Joy* was intended for a broader readership, and this shaped its content, tone, and method of presentation. The editor-in-chief, naturalist Ivo Horvat, explained the aims of the collection in the introduction to the first volume:

> "With this book, we open the pages of *Knowledge and Joy* to a wide range of readers: for older people to refresh and supplement their knowledge, for younger people to expand their horizons, and for children, we also provide a bit of fun and joy. The desire for knowledge is not a gift of only a select few, but something that is deeply rooted in the nature of all people. But many, searching for knowledge, often came across complicated and reading matter that was too difficult. Therefore, they came to the opinion that books are something undesirable. In this work of ours, certain articles are selected to show that serious content can be presented in an interesting and entertaining way" (Horvat, 1942, p. VII).

Although the texts were deliberately adapted to ensure readability and facilitate the acquisition of new knowledge, the editor and authors took great care to maintain a balance between a professional approach to problems and expression that was clear so that it would effectively convey the essence of each topic. The popularisation of science was never intended to come at the expense of its scholarly content. Through clarity and

simplicity of style, they sought to uphold the high quality of the texts and to select topics thoughtfully from a broad range of disciplines.

In the journal *Vienac*, Horvat explained this approach to the anthology:

> "Of course, the framework of *Knowledge and Joy* is completely different from other strictly scientific editions. The purpose of the articles here is not to solve certain scientific questions, but to illuminate them, make them accessible and understandable, to deepen and broaden knowledge and the picture of the world by connecting it with the sensitive and willing side" (Horvat, 1944, p. 84).

In his writings, Ujević referred to the collection *Knowledge and Joy* as the *Little Lexicon*. He took care to ensure its survival and planned the continuation of new volumes even when it was expected that the Communist authorities would suspend publishing activities and abolish the Institute. Ujević regarded *Knowledge and Joy* as a highly valuable publication capable of permanently influencing the enlightenment of young people and promoting a culture of knowledge among the broadest readership. Despite his efforts, the edition was not completed, but *Knowledge and Joy* became the foundation for a new encyclopaedic project from which Ujević would develop the *General Encyclopaedia* ten years later.

Although due to its educational purpose and its aim to both entertain readers and foster critical and creative thinking, *Knowledge and Joy* was not arranged alphabetically like the *Croatian Encyclopaedia*, it was encyclopaedic in essence. Its material was not presented according to a rigid system, since, as the editor himself explained, the purpose of *Knowledge and Joy* was not to create experts but to cultivate creative and spiritual virtues in readers through knowledge and enjoyment. To sustain interest and avoid monotony, the anthology alternated between more demanding and less demanding reading styles and clustered together articles from various branches of science and art. According to the intentions of the editors, the planned sequencing and ordering of texts foresaw those topics that are more complex to be published in selected segments across several volumes, so that, by the end of the cycle, all volumes together would form a coherent whole.

Considering the wide range of topics planned for inclusion in the collection *Knowledge and Joy*, Horvat emphasised in the introductory text that it was intended to encompass all areas of human activity. The collection, therefore, contains a variety of reading material and both shorter and longer articles on topics from the natural sciences. Regardless of the level of difficulty—some dealing with complex theories and recent, abstract areas beyond the reach of human senses—all texts are written in a clear, primarily educational and accessible style, adapting the material to the knowledge level of a broader readership and the youth in particular.

After the editorial introduction, the first volume opens with the musical notation of the Croatian national anthem *Our Beautiful Homeland* ('Lijepa naša domovina') and the full text of Mihanović's poem *Croatian Homeland* printed on the following page. This is followed by Mate Tentor's essay, *The Meaning of the Letter and Written Communication*, and Zlatko Milković's contribution, *Croatian Explorers of Foreign Countries*, which presents the achievements of the renowned Croatian explorers, the Seljan brothers and Dragutin Lerman. Next is Pavel Tomašić's *Care for Health*, which offers a historical overview of the development of medical care from the earliest traces of human life to modern times. The volume also includes Slavko Batušić's art historical text *Rembrandt van Rijn* and two works on national history: *The Arrival of the Croats* by Lovre Katić and *The Leader of the Croats and His Children* by Vladimir Nazor.

Among the many educational and entertaining texts in the first book, two extensive contributions stand out: Petar Mardešić's *The Historical Development of the Ship*, a testament to Croatia's centuries-old maritime tradition, and Kruno Krstić's *What Is Nature? The Beginnings of Western Philosophy*. In the latter, Krstić presents in an accessible manner the origins of Ancient Greek philosophy, which was closely intertwined with scientific thought and evolved through its interaction with science. The article offers insight into the basic scientific knowledge of Antiquity, highlighting the emergence of science and the process of developing knowledge, from early empirical observations to the formation of systematic knowledge and the foundations of scientific inquiry.

The first volume also includes two substantial articles addressing the theme of evolution on Earth, a topic that at the time provoked considerable controversy, particularly in connection with racial theory. These are Miljenko Buljan's *Life on Earth* and *Petrified Witnesses of Ancient Life on Earth* by Vanda Kochansky and Zvonimir Devidé. Both articles present an

evolutionary view of life's development on Earth, tracing it from extinct prehistoric animals known through fossil remains discovered across different regions. They outline the theory of evolution, according to which simple organisms first appeared and progressively gave rise to more complex forms. The texts describe the struggle for the preservation of species and the transformations of the Earth throughout geological history. Through systematically presented arguments, they affirm the existence of biological evolution, with humans positioned as the final link in this developmental sequence. The texts are richly illustrated, and the article *Petrified Witnesses of Ancient Life on Earth* concludes with a colour illustration depicting the evolutionary sequence culminating in humankind, thereby visually reinforcing the concept of evolution and the origin of humans.

Alongside the previously discussed entries from the *Croatian Encyclopaedia*, several articles from the third volume of *Knowledge and Joy* deserve mention. These texts, belonging to the field of the natural sciences, form a coherent thematic sequence that builds upon itself. The sequence begins with Slavko Rozgaj's article *Molecules* (Rozgaj, 1944, pp. 380–384), which interprets the structure of matter as composed of molecules from the standpoint of modern chemical and physical knowledge, defining them and describing their properties. This is followed by the article *Marie Sklodowska–Curie* (Juras, 1944, pp. 385–387), which, alongside a biographical overview of the scientist, discusses her discovery of radioactivity. A shorter accompanying article provides glimpses into her family life. The series concludes with Mladen Deželić's comprehensive essay *Views into the World of Atoms (Pogledi u svijet atoma)* (Deželić, 1944, pp. 390–398).

Deželić's topic is complex, yet he presents it in both a professional and accessible manner. The article begins with a description of the discoveries that led to the modern understanding of atomic structure and continues with an interpretation of newer theories that were, at the time, banned in Germany. Deželić explains Niels Bohr's atomic theory, Planck's quantum theory, and Einstein's corpuscular hypothesis of light. He refers to key contemporary discoveries and theories, such as Louis de Broglie's hypothesis attributing wave properties to moving particles, and Werner Heisenberg's results, which through wave mechanics provided a more successful interpretation of atomic structure than earlier theories.

Deželić concludes that modern physics has equal justification for employing both wave and corpuscular models of the atom, writing:

> "Actually, the image of the atom of wave and quantum mechanics is a very complicated mathematical creation and almost has no clarity. It is difficult to talk about it in a popular way, because that question requires more extensive knowledge of physics and mathematics, so we will limit ourselves only to stating that fact" (Deželić, 1944, p. 398).

He ends by announcing that the next volume of *Knowledge and Joy* would continue with a discussion of modern physics:

> "In the next book, we will describe why protons and neutrons are firmly connected in the nucleus of an atom. What are the forces that bind them together. We will consider why some atoms are radioactive and emit the particles we talked about. We will also mention artificially induced radioactivity. We will also talk about the cause of the enormous solar energy, which the Sun has been radiating continuously into space with the same intensity for 2 billion years, according to the calculations of astronomers and physicists" (Deželić, 1944, pp. 390–398).

However, the fourth volume of the anthology *Knowledge and Joy* was never published. Immediately after the end of World War II, the Communist authorities seized power and abolished the Croatian Publishing Bibliographic Institute, thereby terminating the publication of this encyclopaedic anthology.

12. Conclusion

Mate Ujević is a unique phenomenon in the Croatian cultural environment. He was a highly prominent figure in Croatian cultural life, the founder of the contemporary Croatian Encyclopaedia, and the leading organiser of the publication of reference volumes for three decades. Driven by exceptional erudition and a rich intellect, he accomplished a series of major projects for Croatian culture and left a diverse bibliography encompassing the widest spectrum of culture and literature, including works in foreign languages he knew, such as Italian, French, and Spanish. Although respected in scientific and cultural circles for his exceptional contributions, Ujević did not receive the recognition he deserved. He directly linked the

Croatian Encyclopaedia to the history of Croatia, considering it meaningful only if it critically interpreted and legitimised Croatian values in a European and internationally recognisable context. Therefore, he designed the entire project simultaneously as a project to contextualise and place Croatian culture within the broader notion of European culture and as an act of emancipation vis-à-vis neighbouring European countries, which historically were often unfavourable to Croatia, and which had periodically expressed various claims that disputed or usurped certain features of Croatian culture.

When editing the *Croatian Encyclopaedia*, Ujević fully respected the objective encyclopaedic method and seldom deviated from this principle. He considered the Encyclopaedia a compendium and proof of freedom of thought and research. Under his editorship, the *Croatian Encyclopaedia* and other related encyclopaedic works that he initiated, encompassing historical, contemporary, and future aspects, provided an internationally recognisable lexicographic presentation of content and structure, aligned with universal evaluation criteria. Considering Ujević's main intentions and the significance of the encyclopaedic projects he designed and led, it can be concluded that he devoted all his intellectual and spiritual forces to the realisation of the *Croatian Encyclopaedia* and other major editions of Croatian culture. His work aimed to testify to and preserve Croatian national identity through culture and science while reducing the gap in cultural and social development relative to European civilizational achievements.

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Sažetak

Rad je nastao s namjerom da se prikaže Ujevićev enciklopedijski pristup znanosti, prisutan u tekstovima *Hrvatske enciklopedije* i enciklopedijskog zbornika *Znanost i radost*. Polazeći od složenih predratnih i ratnih prilika i proturječja prije i tijekom Drugoga svjetskog rata, u kontekstu Ujevićeva rada na *Hrvatskoj enciklopediji*, koncepcije spomenutih izdanja i Ujevićeva odnosa prema znanstvenoj istini, razmatra se značenje znanstvenika i novije znanstvene teme. Prikazan je njegov odnos prema suradnicima i svim relevantnim akterima ovog enciklopedijskog projekta na europskoj razini, čija je realizacija predstavljala prvorazredni događaj za hrvatsku kulturu. Prikazana je struktura i koncepcija *Hrvatske enciklopedije*, njezini prosvjetiteljski ciljevi na utilitarističkoj razini,

kao i njezina epohalna kulturna dostignuća koja su je učinila europskim konkurentnim projektom. Raščlambom odabranih tekstova, koje je objavila redakcija Mate Ujevića, rekonstruirana je visoka razina izloženih i prihvaćenih recentnih spoznaja i otkrića, kao što su: Einsteinova teorija relativnosti, apstraktna matematička polja, teorija radioaktivnosti, kvantna teorija, darvinizam i druge teorije koje su u tom razdoblju u nekim dijelovima Europe bile radikalno zabranjene ili su bile uzrok političkih progona.

Ključne riječi: Mate Ujević, *Hrvatska enciklopedija*, enciklopedijski zbornik *Znanost i radost*, prirodopis, znanost, Einsteinova teorija relativnosti, darvinizam.