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“Recent Ideas and Research”

12-14 May 2022

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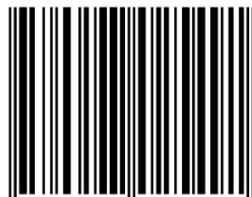
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Protection of Civil and Industrial Environment Against Explosions of Pressure Vessels: Sitting and Layout of Safety Barriers

Egidijus Rytas Vaidogas

Vilnius Gediminas Technical University, Vilnius, Lithuania

Abstract

Protection of built environment in cities and industrial facilities against the hazard of pressure vessel explosions is considered. The main attention is focused on bursts of vessels used for storage and transportation of liquefied gasses. The risk posed by fragments of exploding tanks is analyzed as the farthest reaching damaging effect of these accidents. It is studied how to reduce or eliminate this risk by means of safety barriers build in the vicinity of vessels posing the hazard under study. Sitting and layout of barriers made of reinforced concrete are considered. It is proposed to design these barriers as cantilever walls allowing to provide protection at the lowest cost. A procedure developed for dynamic analysis and dimensioning of a barrier is suggested. The key input information for this procedure is a sample of values of vessel fragment impact velocities and masses obtained by means of a stochastic simulation. Findings of this study can be applied to all situations where pressure vessel can get into fire and explode. Examples of such situations are tank stations with above-ground gas cylinders, roadside territory in road and railway transportation, sites of facilities used to store or transship liquefied gasses.

Keywords: safety barrier, explosion, pressure vessel, liquefied gas, risk.

1. Introduction

Pressure vessels are widely used in industry, agriculture and even in urban environment. They are undoubtedly very useful and sometimes indispensable parts of technological equipment that provides services to industrial facilities and general public. At the same time pressure vessels are hazardous objects that can explode for a variety of causes. One of the most dangerous explosions can occur when a pressure vessel will emerge in an external fire. External heating can cause the so-called boiling liquid expanding vapour explosion (BLEVE) (e.g., Mannan, 2014). Bursting of vessel in the course of BLEVE will lead to ejection and projection of fragments (parts of vessel body). They are the furthest reaching hazard of BLEVE (T. Abassi & S. A. Abbasi, 2007). The present study is devoted to a design of safety barriers that can stop vessel

fragments ejected during such events as BLEVESs. The key idea is to design an economical protective structure that will be sacrificed in case of a fragment impact. The gap of knowledge addressed in this study is how to compose and reinforce a reinforced concrete (RC) element that will serve as a protective wall. Methods developed for analysis of barrier intended to protect against rock fall boulders are adapted to the case of the fragment impact (Lam et al., 2018ab; Sun et al., 2017; Yong et al. 2020ab). This adaptation is seen as the main added value of this study.

2. The Safety Problem Under Study

The prevailing population of pressure vessels are containers used to store and tranship such flammable liquefied gasses as LPG and LNG. The most visible place of urban environment where above-ground pressure vessels can be encountered are petrol stations (Figure 1). These objects are relatively safe. However, occasionally fires and explosions happen in them (ARIA, 2009). Explosions are provoked most often during operations fuel unloading from a road tanker to tanks of a station (Park et al., 2006). Even the LPG pressure vessels built underground can undergo explosions (Ding et al., 2013). Pool fire or jet fire impinging an above-ground vessel can provoke a BLEVE. One of the hazards posed by BLEVE is high-energy fragments ejected during pressure vessel disintegration. They can flight long distances and cause severe damage to objects of civil and industrial environment.

The vessel disintegration in the course of a BLEVE indicates some regularity in terms of fragment shapes and failure (cracking) patterns (Vaidogas, 2021a). This allows to predict ejection velocities and masses of most dangerous fragments, namely, end-caps and oblong end-caps of exposing vessels. This information opens up a possibility to design safety barrier that could stop the projection of fragments. Companies running petrol stations with above-ground pressure vessels are aware of the hazard of vessel explosions and the need to protect surrounding territory of the stations by providing safety barriers. To the best of our knowledge, to date such barriers are designed “by eye”, that is, without applying any rigorous procedures and rules of dynamic mechanical analysis and structural design. These activities have resulted in strange design solutions when the barriers were built in the form of unreinforced masonry walls that were not anchored in their foundations (Figures 2 and 3). Such walls provide some minimum protection against flying fragments; however, unreinforced masonry can hardly sustain severe horizontal actions of impact by vessel fragments.



Figure 1. LPG pressure vessels in petrol stations: above: unprotected pressure vessels, below: pressure vessels protected with anti-ram fence (author's photos)



Figure 2. Unreinforced masonry wall built at the end of a pressure vessel used in a petrol station (author's photos)



Figure 2. Two photos of a strange masonry structure built as a protective barrier in a petrol station (author's photos)

The present study is aimed at providing recipes for the design of a safety barrier produced and constructed as a precast RC element and capable to stop most dangerous flying parts of a pressure vessel that can undergo such explosions as BLEVE. Prediction of properties of impacting fragments has been considered in our earlier works (Vaidogas, 2021ab).

3. Proposed Method for a Protection Against Fragments From Explosions of Pressure Vessels

3.1. Conceptualisation and Dimensioning of the Safety Barrier

A natural design solution of a protective barrier is a cantilever properly anchored in the soil. The shape of the horizontal section of the barrier can essentially influence the resistance of the barrier to fragment impact (Figure 4). The general rule is that the larger is the moment of inertia of the horizontal section the larger is resistance of the barrier. In this sense, Π -shaped and Λ -shaped barriers are preferable to an I-shaped barrier. On the other hand, the I-shaped barrier will occupy lesser space and will be cheaper to produce and erect.

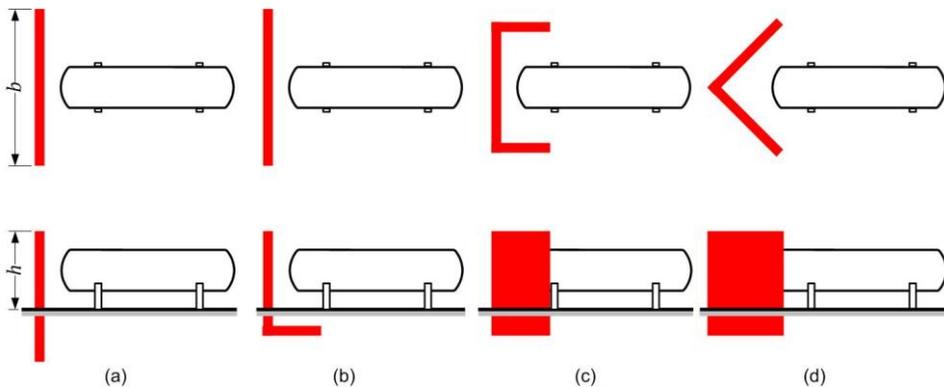


Figure 4. Possible configurations of safety barrier: (a) I section, (b) – I section with L shaped vertical section, (c) – Π section, (d) – Λ section

The design of the I-shaped barrier must start from the choice of the height h and the length b of the cantilever wall (above-ground portion of the barrier) (Figure 4a). The values of h and b should minimise the possibility that the fragment of pressure vessel will pass by the barrier. End-caps and oblong end-caps of exploding pressure vessels are ejected not necessarily along its principle axis (e.g., Mannan, 2014). The overall dimensions h and b should not be very large if the barrier will be positioned close to the vessel endpoint as shown in Figure 4a. These dimensions can also be determined by the space available for barrier construction and/or configuration of technological equipment around the vessel to be isolated by the barrier.

We think that the most economical solution of the barrier is a simple, I-shaped cantilever wall that can be produced as a precast RC structure. As pressure vessel explosions are relatively rare events, it makes sense to design and build such a barrier as a sacrificial structure. It should be possible to reposition this precast element when the protection of surroundings of an individual vessel will no longer be required.

3.2. Design of the Sacrificial Wall of the Protective Barrier

The attempt to design and build a cantilever RC wall that fulfils its protective function and is as cheap and easy to construct as possible leads to the concept of a sacrificial barrier (Linkute et al., 2013). The cantilever wall can be designed to undergo a flexural failure at the base of the wall in consequence of a fragment impact. The section should be allowed to sustain foreseeable degree of damage, provided that the impacting fragment will be stopped. The damage can be expressed by the deflection Δ demanded by the impact (Figure 5). Geometrically values of the deflection Δ can range between zero and the height of cantilever wall, h (Figure 5b). A principal limit of Δ is the deflection at the yield point, Δ_y (Figure 5a). Yielding of the tensile reinforcement in consequence of a fragment impact will cause irreparable damage to the cantilever wall, because the main reinforcement will be lost in essence. Thus

attaining the yield limit Δ_y by the wall displacement can be seen as a “sacrificing” of the barrier.

A design of the barrier for a deflection significantly exceeding the yield limit Δ_y is possible in theory and logically justified. However, excessively large deformations of the wall can provoke a failure of barrier foundation. Moreover, excessively large deformations well beyond the yield limit can be difficult to predict with a sufficient precision. For instance, the bond of reinforcement with the concrete can be lost in the zone of maximum damage.

In a highly specific case the deflection Δ can be limited by a critical value Δ_{crit} related to prevention of a domino effect. It can be caused by an impact of falling wall on adjacent technological equipment (Figure 5c). In this case the tolerable value of Δ will be determined by a local configuration of potential targets with respect to the vessel that can undergo an explosive fragmentation.

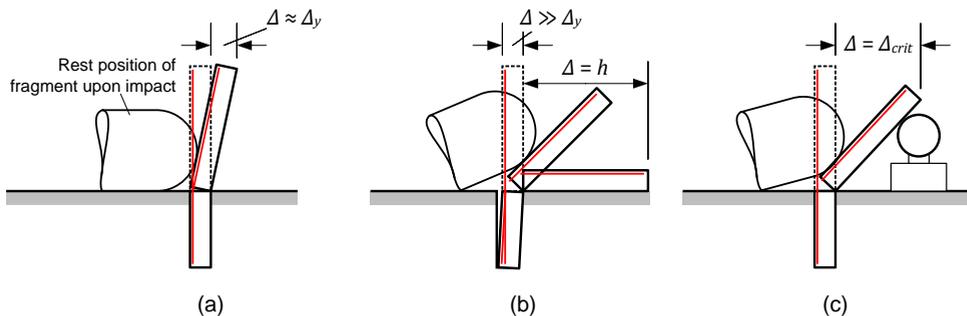


Figure 5. Deflections of the cantilever wall related different degrees of impact damage to the barrier: (a) deflection Δ in the region of the yield limit Δ_y (b) deflection Δ exceeding the yield limit Δ_y or corresponding to a full collapse of the wall, (c) deflection limited by a critical value Δ_{crit} at which a domino effect can occur

The design of a barrier wall, the deflection of which, Δ , will be close to but not exceed the yield limit Δ_y , seems to be a compromise between an economical solution and possibility to predict barrier response to the fragment impact with sufficient precision. In the case that Δ approaches Δ_y , the section will be allowed to undergo cracking and reinforcement yielding and to arrive at an economical design. A fully cracked section at the bottom of the wall will remain elastic if $M_{crc} < M \leq M_y$, where M is the bending moment shown in Figure 6, M_{crc} is the cracking moment and M_y is the yield moment. A simplified method for calculation of M_y and Δ was suggested by Priestley et al. (2007) and Yong et al. (2020b):

$$M_y = 0,80 A_s f_y 0,9 d_s \quad (1)$$

$$\Delta = \varphi_1(\varepsilon_y, d, m_{frg}, v_0, m_{wall}) \quad (2)$$

$$\Delta_y = \varphi_2(\varepsilon_y, d, h, h_{imp}) \quad (3)$$

where A_s is the area of tensile reinforcement, f_y is the yield strength of steel and d_s is the effective depth of tensile steel (Figure 6). The functions $\varphi_1(\cdot)$ and $\varphi_2(\cdot)$ relate the deflections Δ and Δ_y to the input variables of the problem. These functions and their arguments are explained in Figure 6 and Annex C.

In the present format, the design of a sacrificial barrier will consist in a provision of the required area of tensile reinforcement, A_s , at which the deflection demand Δ will be as close as possible to the yield limit Δ_y . The closed-form expressions relating A_s and other properties of tensile reinforcement to the deflections Δ and Δ_y are given in Annex C.

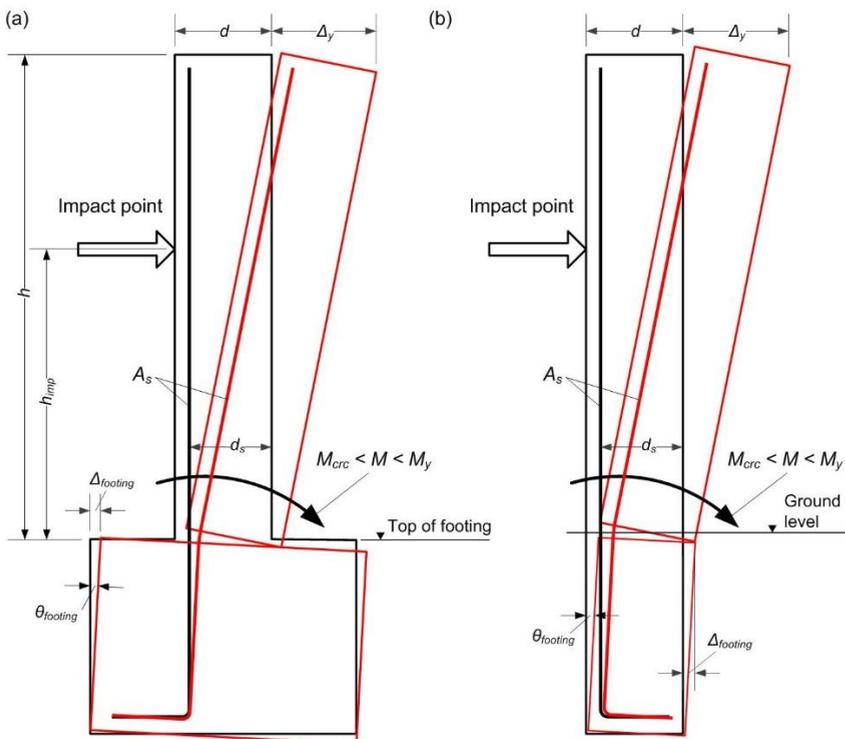


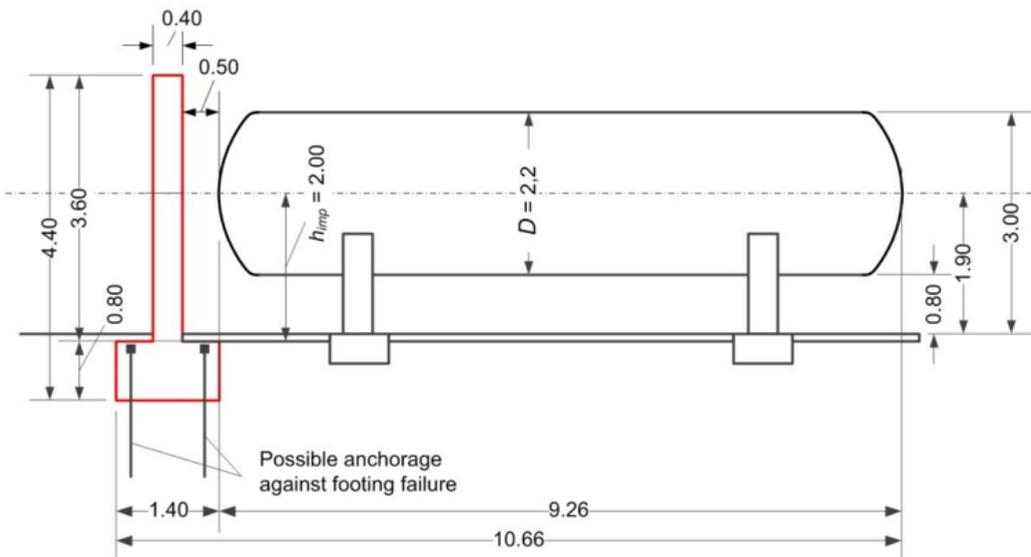
Figure 6. Vertical section of a barrier at critical displacement position, expressed by the value Δ_y : (a) barrier cast on top of a footing, (b) barrier with direct embedment foundation

In principle, the deflection Δ can also be limited by a tolerable deformation of the wall portion below the ground level. This deformation is characterised by the angle $\theta_{footing}$ and the displacement $\Delta_{footing}$ shown in Figure 6. They should not exceed values corresponding to foundation failure at the instant of a fragment impact. The resistance of the barrier portion below the ground level to the impact action will depend on the mechanical properties of soil surrounding footing or direct embedment foundation. However, a detailed geotechnical analysis of barrier support by the soil was outside the scope of the present study. Tentatively, we will assume that the rotational resistance of foundation will be sufficient to idealise the barrier as a cantilever wall.

4. Example of Safety Barrier Design

4.1. Design Situation and Composition of Barrier

A cylindrical propane storage vessel shown in Figure 9 is considered. Technical characteristics of the vessel are listed in Table 1. The vessel can undergo a BLEVE and a fragment ejected by this explosion can cause damage to the territory located on the left of the vessel. The territory must be protected by a barrier with overall dimensions and location specified in Figure 9. Structural properties of the barrier are listed in Table 2.



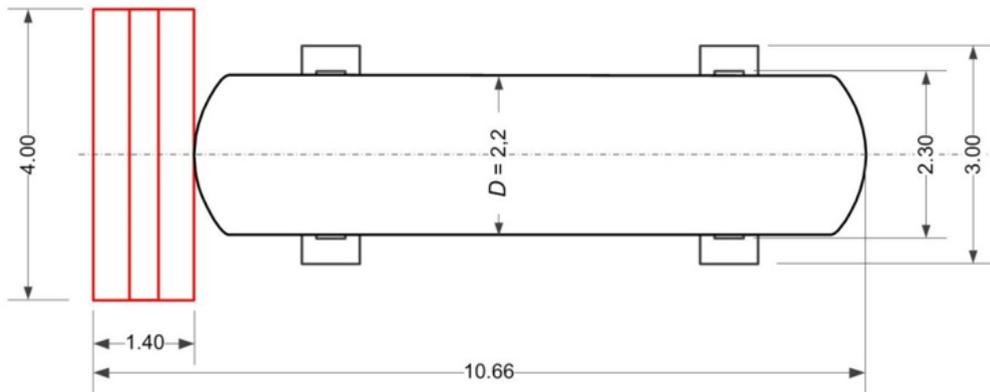


Figure 9. Pressure vessel posing the hazard of a fragment ejection and safety barrier to be design to protect against this hazard

Table 1. Characteristics of propane vessel shown in Figure 9

Characteristic	Value
Volume V_{vessel}	32.9 m ³
Diameter D	2.2 m
Mass of empty vessel, m_{vessel}	6871 kg
Mass of 1 m cylindrical ring	651 kg/m
Mass of head (end-cap)	776 kg
Length of cylindrical part, l_{cyl}	8.17 m
The set pressure of PRV, p_{set}	2.2 MPa
Specific heat ratio of propane, r	1.13

Table 2. Structural properties of the barrier depicted in Figure 9

Property	Value
The height of the cantilever wall, h	3.6 m
Thickness of the cantilever wall, d	0.4 m
Mass of the cantilever wall, $m_{wall}^{(1)}$	14 676 kg

Diameter of the vertical reinforcement bars	ϕ 40 mm
Spacing of vertical bars	Has to be determined by calculation, see Table 4
The effective depth d_s	0.34 m
Required area of tensile reinforcement, A_s	Has to be determined by calculation, see Table 4
Yield strength of reinforcement, f_y	545 MPa
Yield strain of reinforcement, ε_y	0.00273

⁽¹⁾ $\rho_{RC} = 2548 \text{ kg/m}^3$

4.2. Information on Fragment Impact Action

The information on the fragment impact is represented by results of a stochastic (Monte Carlo) simulation of fragmentation and ejection of fragments obtained by the author (Vaidogas, 2021b). A total of 10 000 simulation runs was carried out. The simulation has been carried out for the vessel shown in Figure 9. It generated a statistical sample of pairs of masses and velocities of fragments ejected towards the barrier, $(m_{frg,i}, v_{0i})$ ($i = 1, 2, \dots, 10\,000$). The pairs $(m_{frg,i}, v_{0i})$ are illustrated by a scatter diagram given in Figure 10. Descriptive measures of the simulated samples $\{m_{frg,i}, i = 1, 2, \dots, 10\,000\}$ and $\{v_{0i}, i = 1, 2, \dots, 10\,000\}$ are given in Table 3.

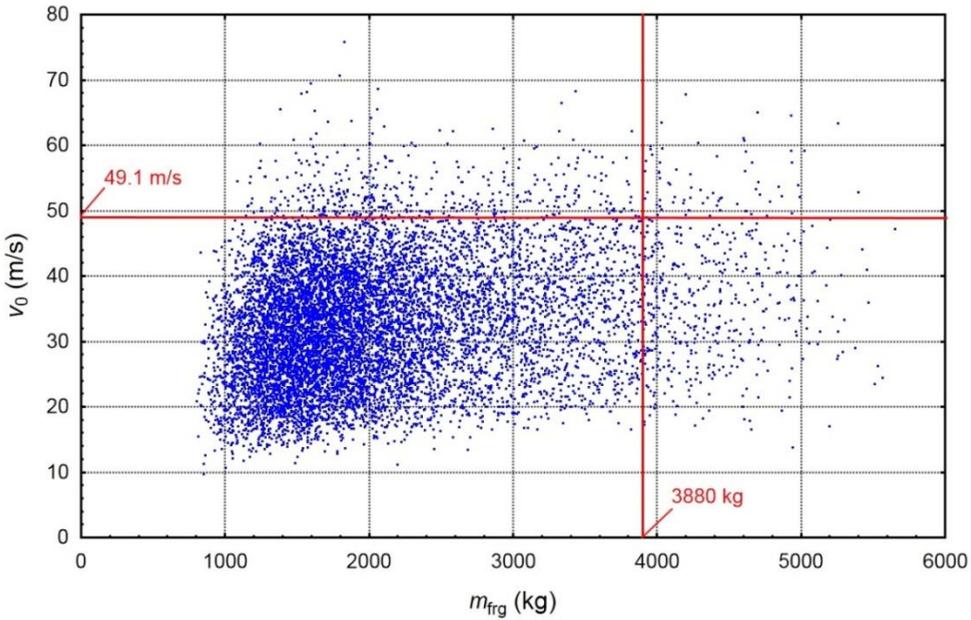


Figure 10. Scatter diagram of the pairs $(m_{frg,i}, v_{0i})$ ($i = 1, 2, \dots, 10\,000$)

Table 3. Descriptive measures of the samples consisting of masses $m_{frg,i}$ and ejection velocities v_{0i} of fragments that can be projected towards the safety barrier shown in Figure 9

Characteristics of fragment	Mean	Coeff. of variation	95 th percentile ⁽²⁾
Fragment mass $m_{frg,i}$ ⁽¹⁾	2089 kg	40.7 %	3880 kg
Ejection velocity v_{0i}	33.0 m/s	28.4 %	49.1 m/s

⁽¹⁾ $i = 1, 2, \dots, 10\,000$

⁽²⁾ See Figure 10

The design of the barrier by applying methods of the structural reliability analysis would require to utilise information represented by all pairs $(m_{frg,i}, v_{0i})$ (Vaidogas, 2007). However, the design of the barrier in line with traditional deterministic methods implemented in such documents as Eurocodes only a part of this information. Data on fragment mass m_{frg} and velocity v_0 can be expressed by conservative percentiles, say, 95th percentiles given in Table 3. Thus the required

tensile reinforcement of the barrier will be calculated for the impact action characteristics $m_{frg} = 3880$ kg and $v_0 = 49.1$ m/s.

It was also assumed that the impact point of the fragment will coincide with the primary vessel axis and so the impact height h_{imp} will be equal to 2.0 m (Figure 9).

4.3. Determination of the Required Area of the Tensile Reinforcement

The height of the cantilever wall and length of the barrier, h and b , are equal to 3.6 m and 4.0 m, respectively. This means that the mass of the cantilever part, m_{wall} , is equal to 14 676 kg (Table 2). The 95th percentile of the fragment mass m_{frg} is equal to 3880 kg (Table 2). This means that the target is heavier than the impactor and the vessel fragment will rebound from the wall (Annex B). With the masses m_{wall} and m_{frg} , the ratio of target's mass to impactor mass is given by

$$\lambda = \frac{0.25 m_{wall}}{m_{frg}} = \frac{0.25 \times 14\,676}{3880} = 0.946$$

An estimate of the fragment velocity on rebound in the opposite direction has been obtained by means of Eq. (B.3), namely

$$v_1 = 0.1537 - 0.1701 v_0 = 0.1537 - 0.1701 \times 49.1 = -8.20 \text{ m/s}$$

According to the considerations given in Annex A, a conservative value of the effective length, b_{eff} , must be taken as $0.5b = 2$ m. The required area of the tensile reinforcement, A_s , will be provided within the length $b_{eff} = 2$ m, 1 m on each to side of the wall centreline. The reinforcement ratio of this reinforcement, ρ_s , will be $A_s / (2 \times 0.4) = 1.25 A_s$. The tensile reinforcement with this ratio should be extended over the entire length of the wall due to possibility of fragment impact outside the wall centreline (Annex A). The required area A_s has been calculated by means of the procedure provided in Annex C. Results of the calculation are given in Table 4.

Table 4. Determination of number and spacing of ϕ 40 mm bars used for the tensile reinforcement

Number of bars	N.A.	20	10	8
Spacing of ϕ 40 mm bars (mm)	N.A.	100	200	250
Area of the tensile reinforcement A_s (cm ²)	N.A.	251	125.5	100.8
Yield moment capacity M_y (MNm)	(C.1)	3.35	1.67	1.34
Yield curvature of cracked section ϕ_y (rad/m)	(C.2)	0.0116		

Effective flexural rigidity of cracked section, EI_{eff} (MNm ²)	(C.3)	289	144	116
Effective stiffness of cracked section, $k_{eff} \times 10^{-3}$ (kN/m)	(C.4)	18,56	9,28	7,45
Velocity of wall following the impact v_2 (m/s)	(C.7)	43,3		
Coefficient of restitution COR (-)	(C.8)	0,714		
Deflection demand of the wall Δ (mm)	(C.9)	19.2	27.2	30.3
Deflection of wall at yield limit Δ_y (mm)	(C.10)	34.0		

The required reinforcement area A_s is 100.8 cm². This is the area of 8 reinforcement ϕ 40 mm bars provided within the effective wall length of $b_{eff} = 2$ m at the spacing of 250 mm. The deflection demand of the cantilever wall with such reinforcement is equal to 30.3 mm and this value is close to the deflection of wall at yield limit equal to 34.0 mm.

5. Conclusion

An approach to the design of RC barriers intended to protect against impact of fragments generated by pressure vessel explosions have been proposed. The approach is based on utilisation of methods of structural dynamics used to analyse and design rockfall barriers subjected to impact of boulders. The proposed RC barriers can be designed and build as sacrificial structures, because explosions of pressure vessels are rare events.

The design of a sacrificial barrier should consist in a provision of the required area of tensile reinforcement at which the deflection demand of the barrier wall will be as close as possible to the deflection at yield limit. The barrier must be built in immediately ahead of the end (spherical part) of the vessel. This will maximise the probability that the fragment ejected towards the barrier will be stopped by this structure. The key information for the design of a sacrificial RC barrier must a prediction of characteristics of fragment impact in terms of impacting mass and velocity. Once the mass and velocity of fragment are assessed, the design of the barrier can be analysed and design as a cantilever wall subjected to a point impact.

Findings of this study can be applied to increasing safety of those areas of industrial facilities and urban environment where above-ground pressure vessels are used. A special attention should be paid to protection of those locations in which fires can occur and impinge pressure vessels.

Annex A. Determining the Effective Wall Length for the Distribution of Tensile Reinforcement

In case of a fragment impact on the cantilever wall, the distribution of the tensile stress and strain in the section at the bottom of the wall will not be uniform. The strain ε_s will vary along the wall length and reach the highest value $\varepsilon_{s,max}$ at the axis of an idealised point impact. Young et al. (2020b) suggest to approximate the actual pattern of a strain distribution by a linear triangular distribution over the section equal to twice the height of the wall h (Figure A.1a). To simplify the distribution of the required area of tensile reinforcement, A_s , along the wall, the triangular strain diagram can be replaced by a uniform distribution over the effective length of the wall, b_{eff} . The length b_{eff} results from equating the area $b_{eff} \times \varepsilon_{s,max}$ to the shaded area below the triangular diagram of ε_s . In the case of a relatively long wall with $b \geq 2h$, the shaded area is equal to $h \times \varepsilon_{s,max}$ and so $b_{eff} = h$.

In the opposite case of a wall with $b < 2h$, the overall length b will be insufficient to incorporate the entire triangular strain diagram covering two wall heights h . In such a case, one can hypothetically assume that the area below the strain diagram will have the shape of an irregular pentagon as illustrated in Figure A.1b. The effective length b_{eff} can be obtained by equating the area $b_{eff} \times \varepsilon_{s,max}$ to the shaded area of the pentagon. This area depends on the angle of declination of the strain diagram, α . With this angle, the effective length b_{eff} can be calculated as $b(1 - 0.5 \text{tg} \alpha)$. The range of geometrically possible values of α is $(0^\circ, 45^\circ)$. This range yields the range of possible values of b_{eff} , namely, $b_{eff} \in [0.5b, b]$. As the value of α will not be known in advance, one can conservatively assume that $\alpha = 45^\circ$ and $b_{eff} = 0.5b$.

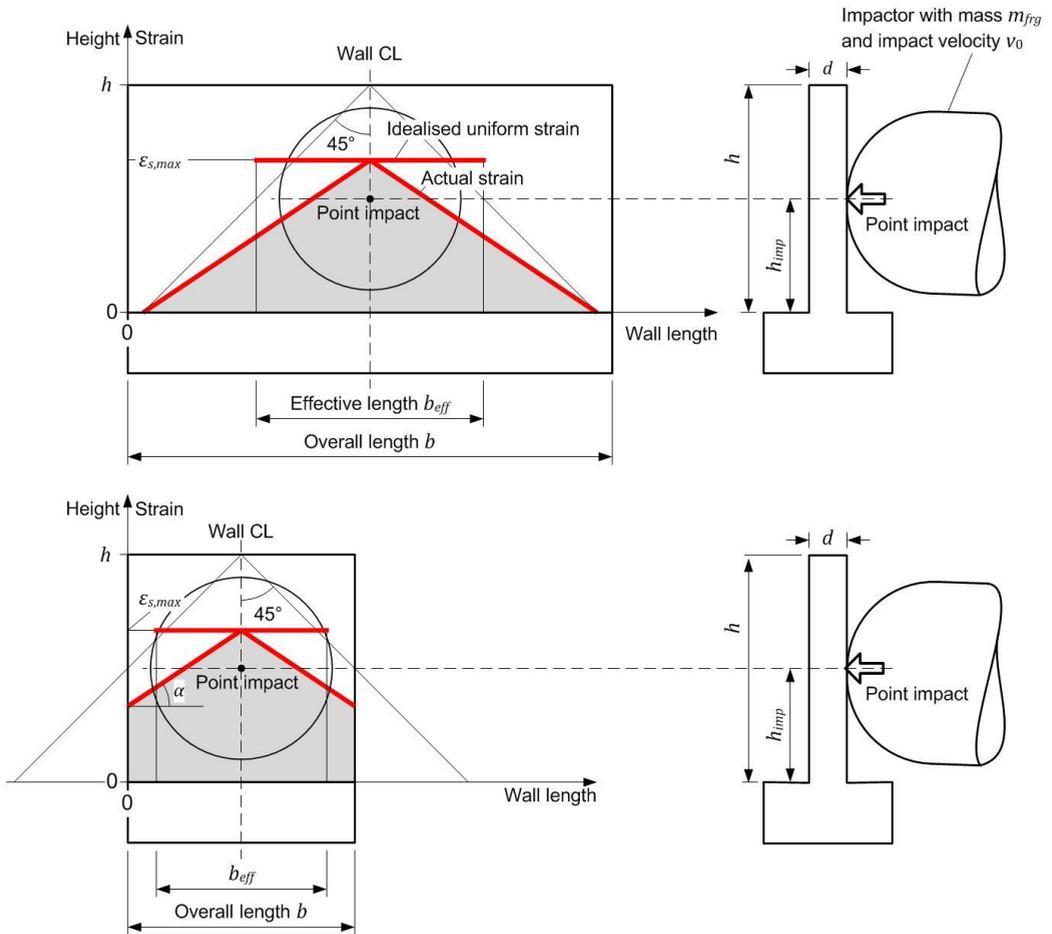


Figure A.1. Distributions of the tensile strain along the base of the wall: (a) the case of a long wall ($b > 2 h$), (b) the case of a short wall ($b < h$)

The required area of tensile reinforcement, A_s , should be distributed within the length b_{eff} . The required reinforcement ratio of this reinforcement, ρ_s , is given by $A_s / (b_{eff} d)$. However, it would pay to extend the tensile reinforcement with the ratio ρ_s outside the effective length b_{eff} and over the entire wall length b . The reason for this extension is the fact that the impactor can strike outside the wall centreline (Figure A.2a). This can create the demand for tensile reinforcement outside the wall section represented by the length b_{eff} . Another example of a cantilever wall that can be loaded “eccentrically” comes about when the barrier is intended to protect against fragments of two or more pressure vessels (Figure A.2b). A precise distribution of stress and strain induced by an impact of one of the vessels in the section at the

bottom of the wall is not known precisely. Therefore the required reinforcement ratio ρ_s can be determined for the case of impact of one vessel and applied to the entire length of wall.

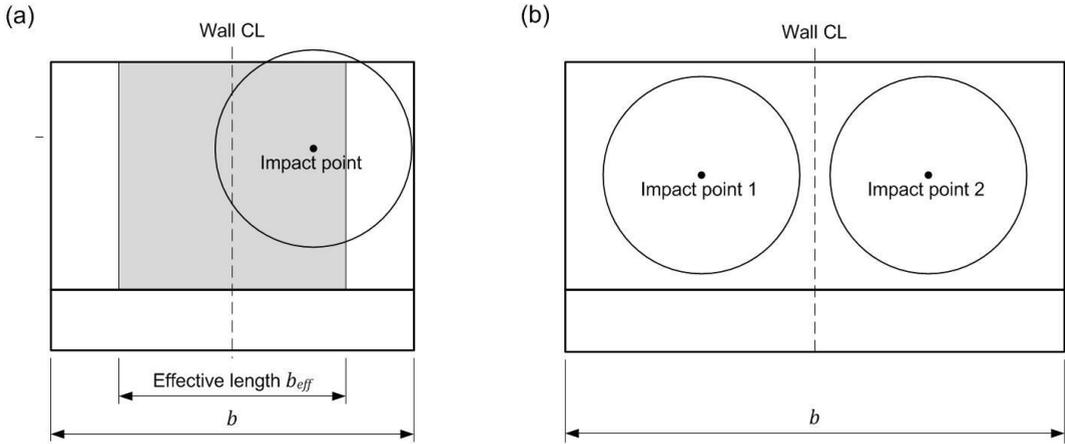


Figure A.2. Two cases of a potential impact outside the wall centreline: (a) deviation of the impact point in case of a single vessel, (b) natural deviation of potential impact points from the wall centreline in case of protection against fragmentation of two pressure vessels

Annex B. Estimating the Velocity of Impactor on Rebound in Opposite Direction

The displacement-based model applied in this study is based on principles of equal energy and momentum (Lam et al., 2018a). Equating momentum of the impactor (vessel fragment) with the lumped mass m_{frg} and the target (barrier) with the lumped mass m_{target} expressed by λm_{frg} before and after the contact yields the model

$$m_{frg}v_0 = m_{target}v_2 - m_{frg}v_1 = \lambda m_{frg}v_2 - m_{frg}v_1 \quad (B.1)$$

where v_0 is the velocity of impactor, v_1 is the velocity of impactor on rebound in the opposite direction, v_2 is the velocity of the targeted object upon impact, λ is the ratio of target mass to impactor mass (i.e., m_{target}/m_{frg}). A rearrangement of Eq. (B.1) yields an expression for calculating the velocity of impactor on rebound, namely

$$v_1 = \frac{v_0 + v_2}{\lambda} \quad (B.2)$$

Impact energy is carried away by the rebounding impactor and dissipated by the crushing of materials. Other part of the energy is transferred to the target and may lead to its failure. The ratio of impact energy to energy absorbed by the barrier is governed by the mass of the barrier, λm_{frg} . For a cantilever wall, the target mass

m_{target} is a quarter of the total cantilever wall mass m_{wall} equal to the product $hbd\rho_{RC}$ (Figure A.1) (Ali et al., 2014; Su et al., 2017).

The general rule is that the impactor should not be expected to rebound when it is heavier than the target, that is, $\lambda < 1$ (Fujikake et al., 2009). The fragment will not rebound from the barrier, fall or slip down immediately after the impact and rest on the surface of the cantilever wall. This end state of impact process is illustrated in Figure 5. In the case $\lambda \geq 1$, it is probable that the impactor will rebound from the wall. The case $\lambda \geq 1$ has been reported in tests on a cantilever wall with $m_{wall} = 2484$ kg and to impactors with the masses m_{frag} of 280 kg and 435 kg (Yong et al., 2020b). The torpedo shape of impactors was similar to the shape of an oblong end-cap of exploded pressure vessel. The total of 12 impact tests has been carried out and no-rebound was observed only in the first test. The experiment yielded 11 pairs of impactor velocities before and after impact, (v_{0t}, v_{1t}) ($t = 1, 2, \dots, 11$), listed in Table B. The pairs (v_{0t}, v_{1t}) are also illustrated by a scatter diagram shown in Figure B.

Table B. Impact velocities and velocities on rebound, v_0 and v_1 , measured in 11 experiments and illustrated by a scatter diagram given in Figure B.1 (Yong et al., 2020 b)

Test no.	Velocity of impactor, v_0 (m/s)	Velocity of impactor on rebound v_1 (m/s)
1	3.08	- 0.26
2	4.17	- 0.57
3	5.18	- 0.92
4	1.55	- 0.17
5	2.48	- 0.34
6	3.66	- 0.69
7	1.91	- 0.10
8	1.93	- 0.17
9	3.08	- 0.34
10	4.26	- 0.34
11	5.10	- 0.60

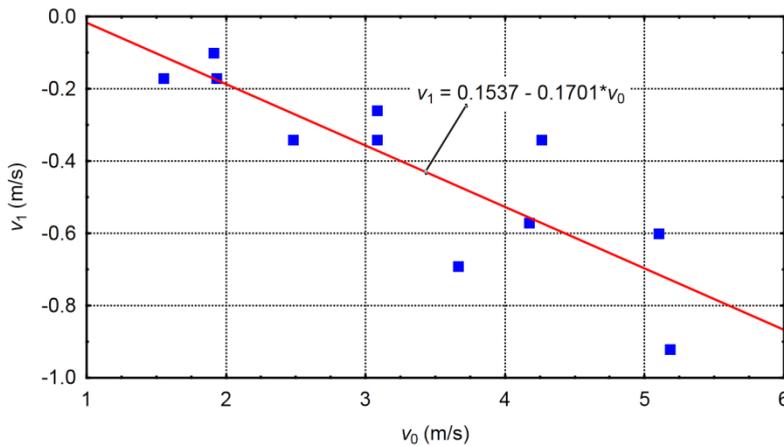


Figure B. Scatter diagram of 11 pairs of impactor velocities prior to and following impact, (v_{0t}, v_{1t}) ($t = 1, 2, \dots, 11$), and linear equation fitted to the points (v_{0t}, v_{1t})

A linear equation represented by the line in Figure B has been fitted to the points (v_{0t}, v_{1t}) . This equation constitutes a simple empirical model for estimating of the velocity of impactor on rebound, v_1 , namely,

$$v_1 = 0.1537 - 0.1701 v_0 \quad (B.3)$$

This model is valid for a very narrow range of impactor velocity values, namely, 1.55 m/s to 5.18 m/s. Prediction of the values of v_1 for values of v_0 exceeding 5.18 m/s will be speculative. However, the test data presented by Yong et al. (2020b) seems to be the only source of information related to response of cantilever RC wall to impact of such objects as rockfall boulders and fragments of pressure vessels.

Annex C. Procedure for Calculating the Required Area of Tensile Reinforcement

The procedure for determining the required area of tensile reinforcement, A_s , is presented herein. The height of wall, h , length at the base b and thickness d are the initial input information (Figure A.1). With h, b, d and the RC density ρ_{RC} , mass of wall, m_{wall} , and lumped mass of target, m_{target} , must be calculated. For a cantilever wall, $m_{target} = 0.25 m_{wall}$ (Annex B). Further input information is the class of steel with the yield strength f_y and the yield strain ϵ_y as well as the effective depth of the wall cross-

section, d_s (Figure 6). The input information related to the impact is the mass and velocity of impactor, m_{frg} and v_0 .

The procedure consists of six steps outlined below. The steps were formulated on the basis of the research results presented by Yong et al. (2020ab) and Priestley et al. (2013) as well as information given in Annex B. To simplify the presentation of the procedure, a list of notations used in this Annex is presented at first:

A_s = total area of tensile reinforcement (m ²)	M_y = yield moment capacity (kNm)
b = length of cantilever wall (m)	v_0 = velocity of impactor (m/s)
COR = coefficient of restitution (-)	v_1 = velocity of impactor at rebound in opposite direction (m/s)
d = thickness of cantilever wall (m)	v_2 = velocity of wall following the impact (m/s)
d_s = effective depth of the wall cross-section (m)	Δ = deflection demand of the wall (m)
EI_{eff} = effective flexural rigidity of cracked section (kNm ²)	Δ_y = deflection of wall at yield limit (m)
f_y = yield strength of reinforcement (MPa)	ε_y = yield strain of reinforcement (-)
h = height of cantilever wall (m)	λ = ratio of target's mass to impactor mass (-)
h_{imp} = impact height (m)	ρ_{RC} = density of reinforced concrete (kg/m ³)
k_{eff} = effective stiffness of cracked section (kN/m)	ϕ_y = yield curvature of cracked section (rad/m)
m_{frg} = mass of impactor (kg)	

1. Select the current (first) approximation of the required value of the total area of tension reinforcement, A_s .

2. Calculate the effective stiffness of the cracked wall

$$2.1. \quad M_y = 0,80 A_s f_y 0.9 d_s \quad (C.1)$$

$$2.2. \quad \phi_y = \frac{1,7 \varepsilon_y}{d} \quad (C.2)$$

$$2.3. \quad EI_{eff} = \frac{M_y}{\phi_y} \quad (C.3)$$

$$2.4. \quad k_{eff} = \frac{3EI_{eff}}{h^3} \quad (C.4)$$

3. Calculate the velocity of impactor at rebound in opposite direction as explained in Annex B:

$$v_1 = 0.1537 - 0.1701 v_0 \quad (C.5)$$

4. Calculate the deflection demand of the wall:

$$4.1. \quad \lambda = \frac{0.25 m_{wall}}{m_{frg}} = \frac{0.25 hbd \rho_{RC}}{m_{frg}} \quad (C.6)$$

$$4.2. \quad v_2 = \frac{v_0 + v_1}{\lambda} \quad (C.7)$$

$$4.3. \quad COR = \frac{v_1 + v_2}{v_0} \quad (C.8)$$

$$4.4. \quad \Delta = \frac{m_{frg} v_0}{\sqrt{m_{frg} k_{eff}}} \sqrt{\lambda \left(\frac{1 + COR}{1 + \lambda} \right)^2} \quad (C.9)$$

5. Calculate the deflection at yield limit:

$$\Delta_y = \frac{\phi_y h_{imp}^2}{3} \left(\frac{3h - h_{imp}}{2h_{imp}} \right) \quad (C.10)$$

6. If $\Delta < \Delta_y$ and $\Delta_y - \Delta < \Delta_{tolerable}$, deliver A_s for detailing the tensile reinforcement. If $\Delta > \Delta_y$, increase A_s and go to Step 1.

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Spectral Studies of Analgesic, Antipyretic and Anti-Inflammatory Drugs Used in Medical Therapy in Romania

Sirbu Rodica

University of Medicine and Pharmacy Carol Davila, Bucharest, Romania

Ana Maria Ionescu

Ovidius University of Constanta, Faculty of Medicine, Constanta, Romania

Sanda Jurja

Ovidius University of Constanta, Faculty Medicine, Constanta, Romania

Cezar Laurentiu Tomescu

Ovidius University of Constanta, Faculty of Medicine, Constanta, Romania

Abstract

Human health decline is most commonly manifested by pain and sometimes fever in the initial phase of the disease. Analgesics, antipyretics and anti-inflammatories serve as drugs with various chemical structures which showcase in different proportions their main actions. They represent medicines that suppress pain and fight fever. The aim of the paper is studying the usual types of therapeutic indications using modern spectral analysis, based on the analgesic, antipyretic and anti-inflammatory actions. The following spectral analysis methods are used to control the chemical compositions of the studied drugs: UV-VIS analyses and IR analyses.

Keywords: UV-VIS spectra, IR spectra, analgesic, antipyretic, anti-inflammatory.

Introduction

Analgesics and antipyretics are drugs that reduce or suppress pain and fight fever. They are a group of drugs with various chemical structure and have associated in different proportions the following main actions: analgesic, antipyretic and anti-inflammatory. Pain is an important alarm system in body protection [1, 2]. Triggers defense reactions to remove the harmful agent [2, 3]. Provides useful guidelines for diagnosis [4, 5]. Acute pain causes an increase in heart rate, heart rate and blood pressure, mydriasis, sweating, hyperventilation, mental anxiety [4]. It is possible to reduce or suppress pain, using drugs that act at different levels, on the links involved in the formation and conduction of nerve influx and in the perception of pain [3, 4]. To combat the pain you can intervene:

1. Preventing the formation of nerve influx, in sensitive endings: local anesthetics, muscle relaxants, vasodilators, anti-inflammatory drugs.
2. Preventing the transmission of nerve influx through sensitive fibers - the case of local anesthetics.
3. Prevention of pain perception, at the level of integration centers: general anesthetics, antipyretic analgesics, morphinomimetic analgesics.

Analgesic - Antipyretic - Anti-inflammatory Actions

Antipyretic-analgesics act analgesically only at the thalamus level, raising the threshold of pain perception, without influencing the reaction to pain. The analgesic effect, for some substances in this group, is more evident in somatic pain, localized and superficial (examples: neuralgia, arthralgia, headache), with or without an inflammatory component and is weaker in visceral pain, deep and generalized. In some cases, a peripheral, anti-inflammatory mechanism would be added to the central, thalamic mechanism [5, 6].

Antipyretic analgesics also influence the thermoregulatory center, without having any other effects on the CNS. They do not produce sedative effects, drowsiness and sleep. It does not affect other types of sensitivity and sensory functions. It has no peripheral effects on the digestive, respiratory, cardiovascular systems. Some analgesics-antipyretics have anti-inflammatory effect, [4, 7].

Antipyretic analgesics reduce the fever by acting on the thermoregulatory centers, they decrease their functional level by tending to restore it to normal values. As a result, peripheral vasodilation, sweating, and decreased metabolism occur. The substances have no effect when the thermoregulatory centers function normally, so they do not lower the normal body temperature, they are not hypothermic but only antipyretic [4, 8].

The action of analgesics-antipyretics on fever is nonspecific and occurs directly through the central mechanism. Fever can also be reduced by drugs that act specifically, but indirectly, on biological pathogens, for example by antibiotics and chemotherapeutics [8, 9].

In acute viral infections of the respiratory tract, analgesics - antipyretics are the medication of choice, in mild and moderate forms, uncomplicated, in patients who do not have organic suffering and in whom antibiotics and chemotherapeutics are not necessary. In infectious fevers with antibiotic-sensitive or chemotherapeutic germs, specific medication will be administered. Antipyretics are associated with them only in cases of high fever, with repercussions, on the CNS and cardiovascular system [1, 4, 8].

Qualification

Chemical structure is an important classification criterion. Thus we have [4]:

Salicylic acid derivatives: Acetylsalicylic acid, Aspirin Direkt, Upsarin, Alka Seltzer (effervescent) Lysine acetylsalicylate, Salicylamide, Diflunisal, Benorilate (acetylsalicylic acid ester with paracetamol)

Pyrazolone derivatives: Phenazone, Aminophenazone, Noramino-phenazone-Metamizole- (Algocalmin ampoules, Metamizole sodium suppositories, Algozone, Novalmin, Novalgin), Propiphenazone (Propiphenazone suppositories).

Aniline (p-aminophenol) derivatives: Phenacetin, Paracetamol (Paracetamol, Paracetamol suppositories, Efferalgan, syrup, or suppositories)

Quinoline derivatives: Glafenine

Non-narcotic analgesics are fundamentally different from morphinomimetic drugs, as they do not produce euphoria, tolerance, physical and mental dependence, so they do not cause drug addiction [5].

Therapeutic Indications

Analgesics-antipyretics have several types of therapeutic indications, based on analgesic, antipyretic, anti-inflammatory, antispasmodic actions. For each of these types of indications, the substances can be used either alone, in isolated administration or in combination, in complex formulas [4, 9÷ 11]. In principle, within the associations it is possible to achieve:

An additive effect, when substances from different chemical groups are used, but act on the same substrate. The advantage of the combination is that lower doses of each substance are used than in their case in isolation.

A potentiating effect, more effective than the previous one, when substances with action on different substrates are used.

Therapeutic indications based on analgesic action (sometimes with an anti-inflammatory component) Neuralgia (dental, intercostal, sciatica). Arthralgias (arthritis, osteoarthritis, spondylosis). Myalgias. Orthopedic disorders (sprains, dislocations, fractures). Postoperative pain. Headache. Dysmenorrhea, [10, 11].

Indications based on analgesic and antispasmodic actions Colic (renal, biliary), dysmenorrhea [4, 11].

Methods and equipment

The spectral method of analysis is one of the most widely used methods for obtaining data on the structure and chemical composition of medicinal substances [12÷15].

UV-VIS and IR spectral analysis methods are often used in drug control to obtain reliable data on the structure of compounds [13,14]. IR spectrophotometry is mainly used to identify drug substances without destroying the integrity molecules. IR absorption is characteristic of a wide range of functional groups, bonds, and structural units. Analyzed drugs by UV-VIS and IR techniques are: aspirin, paracetamol, nimesulide and sodium diclofenac.

UV-VIS spectroscopy

In the UV-VIS analysis spectra, a molecule absorption spectrum is obtained and the Lambert-Beer law is used to obtain quantitative data. Upon impact between a photon and a molecule, the photon undergoes either diffusion (an elastic shock without loss of energy) or absorption (it increases the internal energy of the molecule). Energy absorption occurs when the energy of the photon corresponds to the energy difference between two possible energy levels. The absorption spectrum of a substance is obtained by recording in a graph the variation of a quantity that characterizes the absorption of light (eg. extinction, absorbance, A , extinction coefficient ϵ , depending on the wavelength or number of waves, expressed in convenient units for the respective spectral domain [13÷15]).

Minimum and maximums appear in the spectra thus obtained; the latter, called absorption bands, correspond to the regions of maximum absorption. The temperature can significantly influence the measured absorbance values. By observing this process with the help of a spectrophotometer is obtained an absorption spectrum of the molecule, that is, a representation of absorption as a function of frequency or wavelength. The Lambert-Beer Law is used to obtain quantitative data,

$$A = \log \frac{I_0}{I} = \epsilon cl$$

(1)

$$\frac{I}{I_0} = T$$

(2)

where: A is absorbance, T is transmittance, I_0 and I are the intensities of light before and after the passage of a solution, ϵ is called the absorption coefficient or molar absorptivity. c is the concentration of solution, l is the thickness of the analysis vessel.

The analysis equipment is the GBC Cintra 10e UV-VIS Spectrophotometer which has the following characteristics: it is a double-beam UV-VIS spectrometer, with monochromator, with direct recording of the ratio of test and reference signals and very high scanning speed. Fully automated, it is controlled by an external computer.

IR spectroscopy

The infrared spectral range, IR, ranges from 780 nm to 300 nm, but a narrower range of 2.5 μm to 1.5 μm is used for analytical determinations. There are three areas in IR, namely near IR, middle IR, and far IR. For structural analyzes, including detection, only the average IR region is of interest, which provides the most analytical information. The near IR spectral range is less exact in specific information than the average one, being used mainly for quantitative determinations, and the far IR range is used only in research [13÷15]. IR spectrophotometry is mainly used for the identification of organic substances, including drugs, without destroying the integrity of molecules and less for dosing. IR absorptions are characteristic of some functional groups, bonds, and structural units that the IR spectrum can be thought of as a fingerprint of the molecule studied, which makes it easier to deduce structural details and recognize them. The Jasco IR 4200 Spectrometer Analysis Equipment has the following features: 7800-350 cm^{-1} wavelength range, single beam system, high intensity ceramic radiation source, DLATGS Detector (standard).

Results and discussion

Following the spectral analysis, we obtained the following results, which are systematized according to the method and technique of analysis that we used to obtain the spectra.

UV-VIS spectrum of aspirin

The range of ultraviolet in the visible spectrum is 200-350 nm. The UV-VIS spectra of aspirin in hydrochloric acid solution (0.1 N HCl) and in neutral solution are shown in Fig. 1. The maximum ultraviolet absorption of aspirin was found at 230 nm and 278 nm in acids (0, 1 N HCl) and 225 nm and 276 nm in the methanol solution. The results obtained for the spectra with the wavelength for maximum absorption of aspirin in the solvent-aspirin mixture were compared with the aspirin reference spectrum [10, 11, 15].

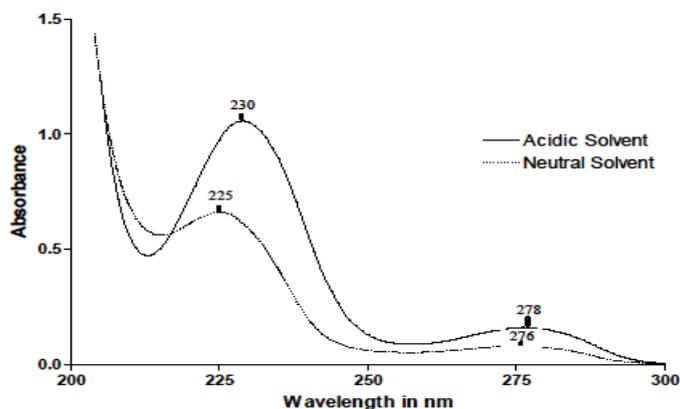


Fig. 1 UV-VIS spectrum of aspirin

The UV-VIS spectrum of paracetamol

The range of ultraviolet in the visible spectrum is 200-350 nm. The UV-VIS spectra in hydrochloric acid solution (0.1 N HCl), in alkaline solution (0.1 N NaOH) and in neutral solution are shown in Fig. 2. The molecular structure for paracetamol is shown in Fig. 2, also.

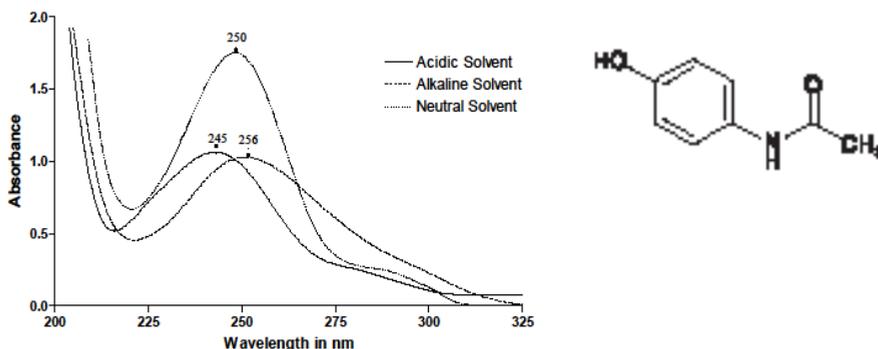


Fig. 2. UV-VIS spectrum and structure of paracetamol

The maximum ultraviolet absorption of paracetamol was found at wavelengths 245 nm, 256 nm and 250 nm in acid solution (0.1 N HCl), in alkaline solution (0.1 N NaOH) and in neutral solution. The results obtained for the spectra with the maximum wave absorption in the acidic and alkaline solutions of the solvent-paracetamol binary systems were compared with the paracetamol reference spectrum [10,11].

UV-VIS spectrum of nimesulide

It is a non-steroidal anti-inflammatory drug (NSAID) with analgesic (pain relieving) properties. It is used to treat acute pain and painful osteoarthritis symptoms. The range of ultraviolet in the visible spectrum is 200-350 nm. Nimesulide's molecular structure and the UV-VIS spectra in acid solution (0.1 N HCl), in alkaline solution (0.1 N NaOH) and in neutral solution are shown in Fig. 3.

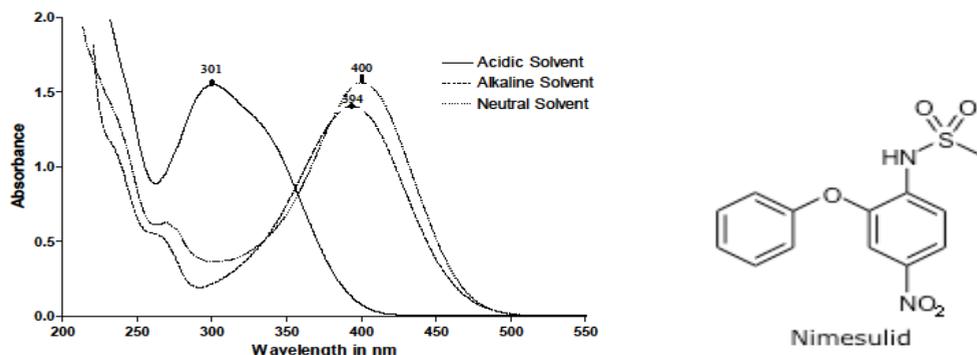


Fig. 3 UV-VIS spectrum and nimesulide structure

Ultraviolet absorption maxima of Nimesulide were found at wavelengths 301 nm, 394 nm and 400 nm in acid solution (0.1 N HCl), alkaline solution (0.1 N NaOH) and neutral solution, respectively. The results obtained for the spectra with the maximum absorption for nimesulide in the acid and alkaline solutions were compared with the nimesulide reference spectrum [10, 11].

UV-VIS spectrum of diclofenac sodium

The range of ultraviolet in the visible spectrum is 200-350 nm. The UV-VIS spectra of diclofenac sodium in acid solution (0.1 N HCl), in alkaline solution (0.1 N NaOH) and in neutral solution for solvent-diclofenac sodium binary systems are shown in Fig. 4. Maximum absorption of diclofenac ultraviolet was found at wavelengths 273 nm, 275 nm, 279 nm in acidic (0.1 N HCl), alkaline (0.1 N NaOH) and neutral binary systems, respectively. The results obtained for the maximum absorption spectra were compared with the reference spectrum of diclofenac sodium [10, 11].

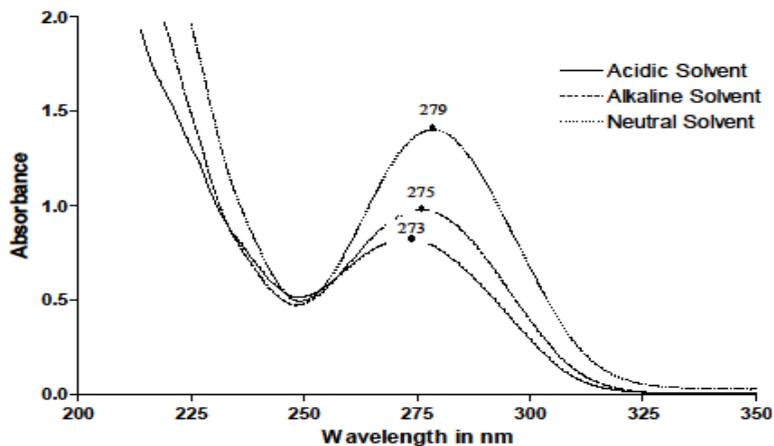


FIG. 4. UV-VIS spectrum of diclofenac sodium

IR spectrum of aspirin

The infrared spectrum of aspirin is shown in Fig. 5. The main wave numbers obtained in the infrared spectrum and their corresponding assignment (bond, type and combined functional group) were characteristic for aspirin. In the range 490 cm^{-1} - 1740 cm^{-1} are combined functional groups with transmittance under 65%T. At 2820 cm^{-1} a level of transmittance 85%T is recorded.

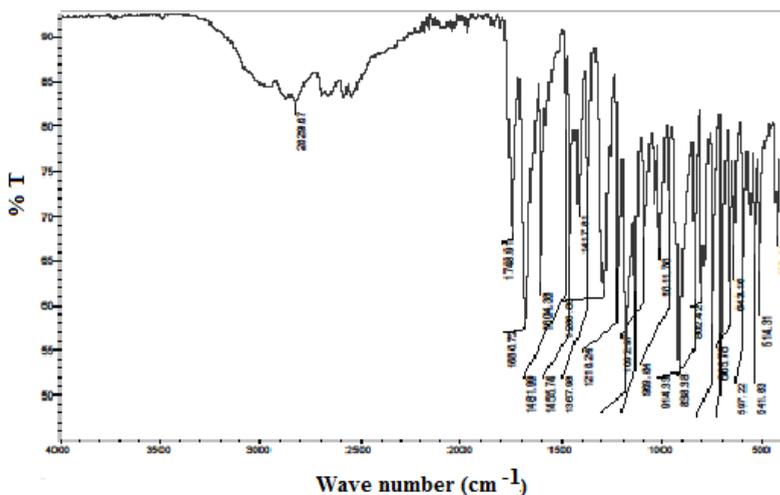


Fig. 5. IR spectrum of aspirin

IR spectrum of paracetamol

The infrared spectrum of paracetamol is shown in Fig. 6. The main wave numbers obtained in the infrared spectrum and their corresponding assignment (bond, type and combined functional group) were characteristic of paracetamol. In range 484,2 cm^{-1} - 1661 cm^{-1} are combined functional groups with transmittance under 60%T. At 3109 cm^{-1} and 3319 cm^{-1} WE find two functional groups with transmittance 74 %T and 68 %T respectively.

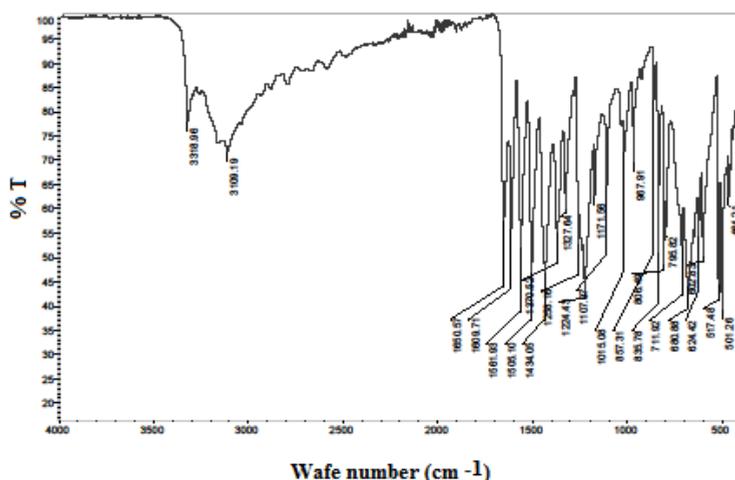


Fig.6. The IR spectrum of paracetamol

IR spectrum of nimesulide

The infrared spectrum of nimesulide is shown in Fig. 7. The main wave numbers obtained in the infrared spectrum and their corresponding assignment (bond, type and combined functional group) were characteristic of nimesulide.

The range of wave numbers 400-1600 cm^{-1} is a group of functions combined with transmittance below 70% T. At 3277.2 there is a functional grouping with 77% T.

IR spectrum of diclofenac sodium

The infrared spectrum of diclofenac sodium is shown in Fig. 8. The main wave numbers obtained in the infrared spectrum and their corresponding assignment (bond, type and combined functional group) were characteristic for diclofenac sodium.

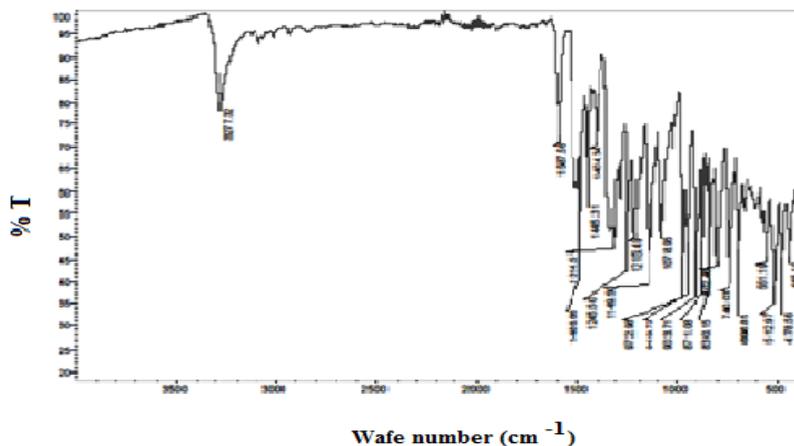


Fig.7 IR spectrum of nimesulide

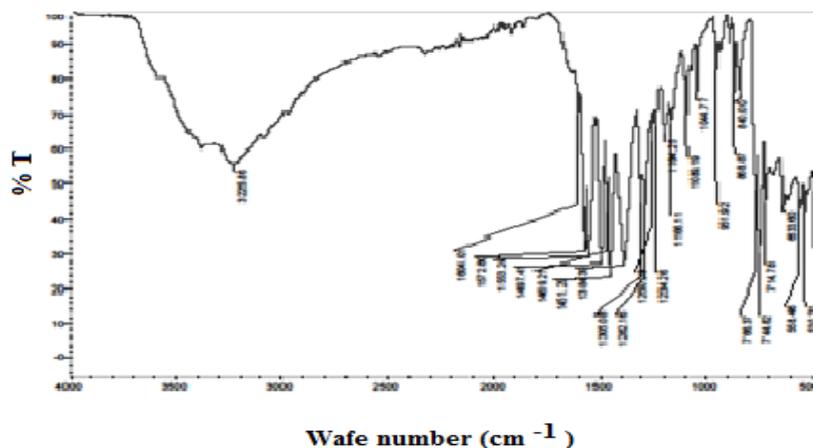


Fig. 8 IR spectrum of diclofenac sodium

The range of wave numbers 890 cm^{-1} - 1804 cm^{-1} is a group of functions combined with transmittance below 45% T. At 3205 there is a functional grouping with 55% T

Conclusions

Pain is one of the most common symptoms that cause a patient to see a doctor. Pain is an important alarm system in the protection of the body. Medications aimed at reducing or suppressing pain and fighting fever.

Antipyretic analgesics reduce fever by acting on the thermoregulatory centers that is, they decrease their functional level by tending to return it to normal values.

The spectral method of analysis is one of the most widely used methods of quality control for obtaining data on the structure and chemical composition of medicinal substances.

Our study can contribute to a spectrum atlas that can be used in drug control.

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The Waves of Time Revisited

Glimpses of life

Matti Itkonen

University of Jyväskylä, Finland

Abstract

This study could perhaps be characterized as the art of walking in time, verbally, pictorially and abstractly, i.e. using words, images and thoughts. Of course, the ideal of essayism also includes a scientific dimension. Equally the aim is to make multi-level use of the idea of dialogue. At the same time, the writer is also carrying on a monologue (with himself), an aspect that is called dialogic monologue. After all, the respondent, too, is himself the questioner. Architecture and the essay are reminiscent of each other. The created building and the created word are close relatives. An essayistic study signifies a hermetic state of language. A text's inner verbal room is constructed from a circle of ideas. Roundness means enclosure: then there is an end at the beginning and a beginning at the end. Yet space is not circumscribed and confined. The actual beginning and end are always located outside the respective verbal room. The spiral of deduction forms a linguistic wisp and whirl that begins and ends as a chronological sequence. The past points forward to the future, and the future looks back to the bygone. The deepening of ideas means passing through several verbal rooms and, during that journey, conclusions will be refined. The Waves of Time, just as the Aaltos of their time, are surges of masterfulness. Glimpses of life mean flashes of Finnishness. They are collective snapshots: excerpts from a shared national story.

Keywords: essayism; Aino and Alvar Aalto; spirit of the place; functionalism

Prologue

The wave breaks. The swell weakens. The force of the breaker subsides. Footprints left in the sand fade and dissolve. Water washes away the years. A human ceases to exist. Words remain. Each of us reads them in our own way: concretely or figuratively. Language cannot be commanded. It is the home of expressions, the dwelling of meanings.

Sometimes the waves of time crashed onto the shore with their white horse crests riding high. Development took off with the automobile and hitched a lift into the future. Time touched language: The first part of the word, auto, migrated into Finnish. The ending, bil, became attached to Swedish. The aesthetics of roads was born. The

village lane turned into a motorway. Networks acted as the mainstream of everyday life. Lakes and rivers were crossed. The poetry of bridges was written.

These reflections are an introduction to a forthcoming Aalto study. The tenor of the review is now essentially essayistic and literary. My own experiences, deliberations and earlier writings serve as important source material. They have arisen both in Finland and abroad. My interest was particularly stimulated and affected by Virpi Suutari's eloquent and moving documentary *Aalto* (2020). Of course, even here, my great inspiration has been Dr. Göran Schildt. His importance will be further emphasized in my later study of Aalto's artistic thinking, at which point I shall examine the significance of the collaboration between Aino and Alvar Aalto. This step paves the way for the key element of working together. Instead of an individual, a twosome, a duo, emerges - or perhaps even an 'indivi-duo'.

The perspective on the topic, then, is personal. I assume, however, that some of the conclusions and interpretations could be universally valid. Perhaps the term "cultural images from memory" could also be used to define my way of writing, where dialogue between word and picture is necessary. The present moments here are the early 1940s, the autumn of 1941, and the year 2020. The time perspective is almost 80 years. The period pictures are also similar: an era of war and pandemic. So an ongoing crisis is associated with both present moments. There also exists a desire for both to be passing moments, to be transitory. At issue is a powerful and momentous turning point or crossroads. (On the spirit of time and place, see e.g. Bolgár, 1969; Itkonen, 2002; 2012; 2018; 2020; Jääskeläinen, 1957; Pulla, 1959; Vuorio, 1953.)

Together the Aalto architect couple sketch out both everyday life and festive moments. Two working together create more than one working alone. Even in wartime, there is a need for architectural design language and the art of being human.



Photograph 1. Aino and Alvar Aalto.

Photograph 1 was on display at the Alvar Aalto Museum. It is also included in Suutari's *Aalto* documentary (on the *Aalto* film, see also Design Stories 2021; Virpi Suutari 2020). In both film and museum, the photograph is an essential element of narration. It embodies the importance of working together. Each and every action would seem to be guided by the absolute idea of equality between the participants. The Aaltos complement each other. Only cooperation can make the best imaginable outcome possible. War is only the existential framework, the prevailing structure of life, located in the background of artistic activity. Of course, it maps out its own and, in some places, even precise existential boundaries on the world.

In Photograph 1 war and everyday life are presented side-by-side. Designing and creative work are carried on even while out there the world is ablaze. A home is a refuge in the midst of all uncertainty. The military uniform and everyday clothes embody the dichotomy of reality. They tell about the home front and the frontline of battle. Above the entire existential arrangement, there seems to hover a spirit of modernity. Homeland and humanity are the measures of everything. The photograph is extremely expressive and poignant.

The art of interior space

Travelling is an important viewpoint when looking at the Aaltos of that time and at the waves of time. The most interesting of conversation partners is the previously mentioned art historian Schildt. His excellent volume *Aurinkolaiva* (The Sun Ship) (1957) is an appropriate travel guide. The book gives an inspiring description of Daphne's journey on the Nile. For some time Alvar Aalto was also on board the sailing boat. Docent Henrik Knif has also taken a thought-provoking look at the subject in his book *Göran Schildt – Kaksi Elämää* (Göran Schildt - Two Lives (2020)). However, the viewpoint of my own research differs fundamentally from Knif's description. I will return to the analysis of the Nile journey in more detail in my already mentioned forthcoming Aalto study where the essayistic significance of Schildt will also be analysed in greater depth. The present section is thus the initial spur for a comprehensive philosophy of travel.

A home is not just a roof over your head. A home is an abode of peace for the whole of existence, a safe haven. It is a human being's most personal and private circle of being. Perhaps the home could be considered a kind of practical utility for daily use. For the Aaltos, the home had also become an *objet d'art*. It served as a window looking into visionary architecture and modernity. Their home was designed to herald the future. Words of tomorrow were written into its formal language. The Aaltos' home was a reflection of a new era.

The Aaltos' home in Helsinki, on Riihitie Road in Munkkiniemi, was completed in 1936, which was also the year of the Berlin Summer Olympics. Europe was already on its journey towards war and a chaotic and critical turning point in the notion of being human. At this point, however, there are no grounds for focusing on the philosophy of

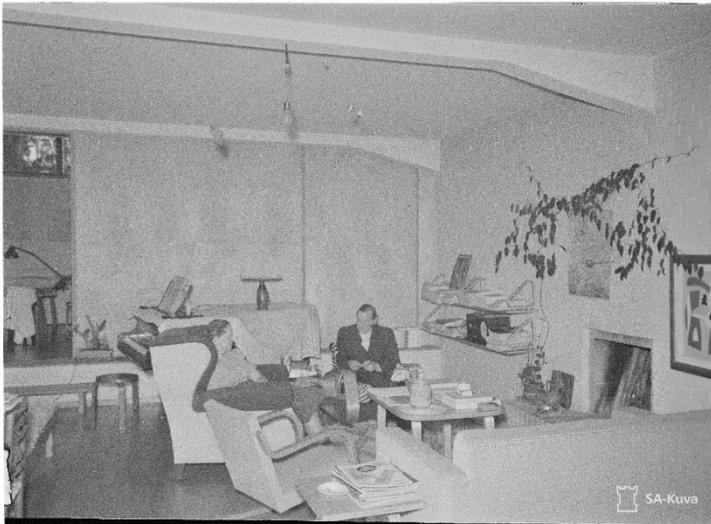
architecture or the history of war. Their analysis needs research entirely of its own, which is why the subject is now only lightly touched upon. The leading role, after all, is taken by an essayistic analysis of the idea of travel. (See also, for example, *In Aalto's atelier*, 2020; *Aalto's home*, 2020.)

As Daphne glided along the surface of the Nile, Schildt and Aalto were engrossed in deep discussions about art, for example. The book *The Sunship* interestingly describes these reflections which focused on being human as the measure of everything. It was that ideal notion of functionalism that had an essential place in Aalto's architecture. The way Schildt describes the framing of the question stimulated further deliberation in the reader: "For him [Alvar Aalto], the living person is the centre of everything, but it is not an heroic superhuman pursuing the absolute, nor a neutralized Nordic welfare state citizen, but an independent, fearless type consisting uniquely of strength and weakness. I suspect Alvar got to know this human in his childhood among the street lads of Jyväskylä, although he later built a truly spiritual brotherhood with Anatole France, Brunelleschi and Catullus. In any case, it is this particular type of person who determines Alvar's entire worldview and his art, and he carries it with him as a measure by which everything is measured: can this thought, this thing, town plan, book, piece of furniture, building or other person withstand the gaze of an idealized Aukusti Nypperi**?" (Schildt 1957, p. 244; see also Schildt, 1964, on Aalto's architecture.)

Without photographs, this analysis would lack impact. The use of a sample pair of photos sheds light on the matter in many ways. We begin the inspection of the Aaltos' home with an "inner gaze": an examination of the essence of the interior.



Photograph 2. At work.



Photograph 3. Everyday life.

In their work the Aaltos created a daily life that was both valuable and valued. Home was a haven of rest and work. What might Aukusti Nyyperi, mentioned by Schildt, have thought of the Aaltos' house? What exactly would he be like as an ideal type, as anybody? On what basis would he qualify as a person who could act as the measure of everything? By no means a small and trivial task. Does the person at the centre of everything understand the magnitude of his role? Or is it enough that he is just his own true self?

The interior of Aaltos' home is like a showcase for their art and skill. I would even talk about it as holistic home art and the poetry of everyday existence. From work there comes art, and art becomes work. An object for daily use develops into an *objet d'art*. How and why does such a transformation take place? An inspiring co-worker, an inspiring environment and the idea of something the world still needs: in this way, ingenious practical creations are produced. The beauty of the object gradually transforms practicality into artistry. By way of the thought, paper draft, and implementation, the visionary object proceeds into the category of art. However, without the appreciation of users, the transformation will not succeed. Here, too, the magic word could be functionality - or functionalism. Indeed, then, the human being is the measure of all things.

The workspace in photograph two is high and bright. There is boundless space and open space as well as light from the large windows. In such an environment, it is easy for ideas to arise and grow to heights. An important element would seem to be cooperation, something which only becomes a reality when the ideal of equality prevails. Both parties are equally important. Without the other, one half of the strength of creativity is missing. Virpi Suutari's documentary *Aalto* skilfully highlights

this fact, which is one of the most insightful aspects of the film. Suutari has made a documentary of high quality.

The Aaltos were able to combine the ordinary workaday man and the spiritual giant. Or at least, Dr. Schildt interprets the situation this way. As role models for the workaday everyman he mentions the Jyväskylä street lads from Alvar Aalto's childhood. In this way, Schildt sees the birth of a living man, a "type" built of strength and weakness. Even though it refers to a partially ideal character, it is still not about a hero, a Greek *heeros*. In photograph two, then, the Aaltos would have been creating buildings, homes for such a person. Then all people are considered equal. It would be good for everyone to live in such a society. Maybe everyone would like to call it their home. Presumably this is what the Aukusti Nyyperi mentioned by Schildt would think.

In photograph three, the Aaltos are spending their daily lives in a dwelling which is a condensation of their already realized masterly ideas. In the interior, the arts and daily life are in harmony with each other. They are in a thoughtful dialogue, each with the other. Many of the Aaltos' own masterpieces are on display. Their timeless design language speaks to us and for itself. Works of art, a map, a grand piano and plants complete the harmonious and rounded-off overall impression. In the ambience of the living room, both the artists and Aukusti Nyyperi would feel at home. Modernism represents an era of days yet to come. As an interpreter of the 2020s, I am also pleased by the view. Nationality and internationality, as well as the workaday and festive, exist side by side in harmony. Without doubt the overall composition can also withstand the gaze of a living person. And really there's nothing to wonder about. When the human being is set as the ideal of being, the home becomes a refuge. Its emotional appeal goes beyond the individual.

The warmth of the homely gaze

War does not diminish the importance of the home and one's own existential sphere. It is like a protective wall against the cold winds of the world. An equal life companion and a family are essential elements of a good life. And they make many other things achievable. Without them numerous plans would remain unfulfilled. When there is warmth in the homely gaze, a human smile is sincere, too.

My reflective paths still lack depth. The discussions between Schildt and Aalto on the Nile journey are once again essential. *The Sunship* is still one of the gems of Finnish travel literature. Schildt aptly characterizes Aalto's role as a thinker and artist: "The evening ended in the best of moods, in precisely that kind of freely meandering, gentle mocking and meaty philosophizing at which Alvar [Aalto] is a master. In this context, I have to say something that the reader may indeed have already understood: I have no doubt whatsoever that Alvar Aalto is one of the truly great artists of our time. Only the great works of architecture of past centuries have touched me as deeply as the Säynätsalo Town Hall and a few of the wall surfaces at the Jyväskylä College of Education. Being with Alvar therefore means much more to me than just the joy of

intelligent and inspiring company: it allows me to see the problems in both his own creative work and in art generally.” (Schildt 1957, pp. 243–244.)

A pair of photographs rich in content is needed to analyze the Aaltos’ artistry. It should also shed light on Alvar Aalto’s philosophizing, which is deemed masterful. What is of particular interest now is to examine architectural insightfulness.



Photograph 4. Sheltered privacy.



Picture 5. Risen from the landscape.

What makes a particular building an architectural masterpiece? The front yard, the facade, is a stripped down and delimited area of the world. A public space has been transformed into an accentuatedly private space. The basic bare outer shell conceals its abundant contents. It's like a secret whose solution requires effort and application. It is not something revealed to everyone.

It would be interesting to talk about a multi-faced house. The look of the building would differ when viewed from varying directions. Accordingly, the spirit of the place would also change as one moved through its space. Or it would be a matter of different variations or nuances in the spirit of the same place.

In photo four, the Aaltos are hidden from the gaze of outsiders. Maybe the family is also out of reach of the war. The still life set-up emphasizes intimacy. Privacy is important. Each one must understand that it is to be cherished. Likewise, other people must know how to appreciate the importance of privacy. This is something that has changed a fair amount with the passing decades and the technicalization of existence. Some modern people specifically want to be on view and as visible as possible. The topic will be examined in more detail in my forthcoming essays. (On essayistics particularly, see Itkonen, 2006; 2010; 2010; 2015; 2017.)

The pair of photographs four and five perfectly captures the idea of a theme and its variations. Just as in Schildt's description, I as a researcher also have the opportunity to look at the essence of Aalto's architecture. I can then be indirectly conversing with him. I am also happy to agree with Schildt that Aalto was one of the really great artists of his time. However, the claim needs to be made more specific to the extent that we can justifiably talk about Aino and Alvar Aalto together as the Aaltos. The situation also becomes clear in photograph four. The family unit also plays an important role: children mean the continuity of existence even in time of war. The world will not disappear but will continue to exist even after the exceptional events of war. The same truth is also told by the green plants. Hope should never be abandoned.

The corner, with its wooden fencing, reveals the presence of certain existential ideals. Rest and exercise as well as activity and reflection alternate in daily life. Alvar Aalto's military uniform is a sign of the actual present moment. Does the status of officer have any special meaning? I would presume so. Even in the days of the war, the role of the artist differed from that of the rank and file.

A lounge for sunbathing, a hanging trapeze bar for gymnastics, vines to enliven the environment and a sheltered canopy for quiet moments, they all still carry echoes of everyday life at the time. Perhaps it was in that environment that the initial ideas for the architectural masterpieces mentioned by Schildt were born: the Säynätsalo Town Hall and the wall surfaces of the Jyväskylän College of Education, now the University of Jyväskylä. Artistry and practicality are equal elements present in the garden view shown in photograph four. Functionalism was on a human scale, and the human was

the ultimate creative stimulus of functionalism. They needed the inspiring power of each other, a fact that the Aaltos were very clear about.

Photograph five typifies the intertwined importance of intellect and emotion, the way that total works of art are created. The architectural creation seems to have risen directly from the landscape. Or we might also talk about a miracle that has sprung from the bosom of the earth. The space is not closed but opens out into time and space. The existential framework is heard in the sighing of the tall and ancient pines. The green plants are like shielding hands protecting the home. Any evil does not even come close to this idyllic harmony. The stone slabs are reminiscent of centuries-old footprints that link antiquity to the present. Yes, we should believe Schildt's words: the Aaltos were among the most significant artists, both in wartime and during all the following decades. They were seers whose gaze extended to timelessness.

Epilogue

Fate appeared as a travelling companion. Sorrow arrived. The twosome became a onesome. Yet Aino Aalto's spiritual presence is also felt in this modern age of the 2020s. The narrative power of photography is undeniable.



Photograph 6. Spirit and life.

Life flows in green plants. They breathe life into both an interior and an exterior. They make a building a home. Aino Aalto was also able to carry this view over into her works of art. Even at the moment of their birth they were indeed both objects for use and *objets d'art*. The masterly creations were home art. There was a warmth in them.

Just as the waves of time are also waves of timelessness, so the Aaltos of that time are timeless Aaltos. I am proud to have had them as my guides on my cultural journey. Our shared journey is only just beginning. It will continue in the very near future.

English translation by Glyn Hughes

Notes

*Translator's note 1. The title plays on the word 'aalto'. In Finnish the word literally means 'a wave', but it is also a common surname.

**Translator's note 2. Aukusti Nypperi (August Nyberg) was a neighbour of the young Aalto. His bohemian lifestyle appealed to and influenced Aalto.

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The impact of Justice Reform implementation in Albania

Erjola Xhuvani

PhD, Wisdom Collage University

Abstract

The phenomenon of corruption is very evident in the Albania, especially in the field of justice. In order to combat corruption in judiciary it is implemented for the first time the transitional re-evaluation of the judges and prosecutors (veeting process). The aim of this article is to give an overview on the impact of the justice reform and the vetting process in Albania. This process passed through different obstacles and the most significant one was the will of opposition not to approve the draft law in the Parliament. In the first part of the article is given an overview of the corruption in the justice system in Albania. The second part of the article describes the approval of the package of laws part of the justice reform. The third part of the article is focused on the implementation of the vetting process by showing the data on the continuity of the re-evaluation of the judges and prosecutors. The objective of this article is to put on scales the profits of the vetting process and the negative consequences of it. At the end it will be measured the real impact of the vetting process.

Keywords: Justice Reform, vetting process, corruption, Albania, judges, prosecutors, re-evaluation process.

Introduction

There is a broad public perception that the justice system is affected by the phenomenon of corruption and external political influence in the administration of justice. Corruption, lack of transparent practices, length of processes and non-enforcement of court decisions has affected the negative perception of the public regarding the transparency of the judiciary. The judiciary is considered as one of the areas with high level of corruption from the evaluation reports of foreign and domestic organizations, public complaints or denunciations made on the green numbers placed in each institution¹. In a 2009 survey entitled "Corruption in Albania: Perceptions and Experiences", the Institute for Research on Development

¹ https://drejtesia.gov.al/wp-content/uploads/2022/04/Annual-Report-2021_Cross-Cutting-Justice-Strategy.pdf, pp 9

Alternatives found that Albanians believed that lawsuits are mostly influenced by monetary interests, business ties, bonds personal information of judges and political considerations. These polls have shown that Albanians believe that the judiciary is one of the 3 (three) institutions that have the least contribution in the fight against corruption¹.

In October 2012, the Centre for Transparency and the Right to Information conducted a survey with 58% of the total number of judges. 25% of them were of the opinion that the justice system is corrupt, while 58% believed that the system was perceived as corrupt. 50% of the judges were of the view that the judicial system was not free from political influence².

There is a general perception that the education system fails to sufficiently train citizens on the rights and obligations of their legal status, and on the importance of recognizing and enforcing the law. Massification without criteria of higher legal education has conducted a reduction of the quality of preparation of lawyers offered to the labour market. Except the problematic in admissions, and the lack of harmonization of programs, one of the main problems regarding the quality assurance in the judges decisions, is related to non evaluation of meritorious³.

The judicial system has been one of the most problematic issues addressed in the European Commission Reports, due to the obstacles observed during the functioning of this system in Albania. Delays in court proceedings, postponement of court hearings, lack or shallowness of reasoning in court decisions, the problem of judges' immunity, transparency in court decisions, improvement of court infrastructure, have been the most problematic issues over the years identified in Progress Reports of the European Commission in the years 2006-2018.

In addition to the issues that have not been resolved and continue to be a stalemate for the judicial system in Albania, there are some issues for which the necessary measures have been taken and resolved in accordance with the recommendations of the European Commission. Specifically, in the Reports of the European Commission, problems have been identified such as the overlap of competencies for the inspection of judges between the two institutions, the Inspectorate of the High Council of Justice and the Inspectorate of the Ministry of Justice. The 2012 European Commission Progress Report on Albania states: "Improvements have been made to judicial accountability, addressing the overlap of inspection powers between the HCJ

¹ http://www.reformanedrejttesi.al/sites/default/files/dokumenti_shqip.pdf, pp 1

² Corruption in Albania, Perception and Experience, Institute for Development Research and Alternatives, pp. 22-24 (2009).

³ <http://www.gazetadita.al/keshillikombetar-i-studenteve-qeveria-te-ktheje-vemendjen-tek-korrupsioni-ne-arsim//>,

inspectories and the Ministry of Justice, through the implementation of the Memorandum of Understanding on Inspections."

Regarding the completion of the legal framework in the field of judiciary, measures were taken by the Albanian side to draft and approve the relevant legislation in this field. Specifically, in the Progress Report of 2012, the adoption of some important laws such as the law "On administrative courts", the law "On the national judicial conference" and the law "On advocacy" were assessed as positive steps. The lack of these laws has been addressed in several European Commission Reports of previous years. Another achievement identified in the European Commission for 2012 is the adoption of the Justice System Reform Strategy in July 2011 and the revised action plan in March 2012. In addition to the tasks performed, the European Commission Reports identify several issues that remain unresolved and are key points in reforming the judicial system. Below we will address some of these issues.

According to the Council of Europe Commissioner for Human Rights¹, among others, the amendments of the Constitution of Albania during 2012 which limit the immunity of judges are welcomed. The Commissioner emphasizes that it should be further strengthened independence of the High Council of Justice through legislative changes, which would enable qualified majority voting by the parliament of members of the High Council of Justice. The Commissioner notes with concern that the current system of appointment of judges of the Supreme Court and the Prosecutor General carries a serious risk of exerting an inappropriate political influence. He calls on the authorities to approve the necessary constitutional changes, in order that the main role in the appointment of judges of to be given to the High Court by the High Council of Justice. Further authorities are invited to take appropriate legislative measures, which would enable voting and approval by a qualified majority in the Assembly of the General Prosecutor, appointed by the President of the Republic. The Commissioner welcomed the request made by the Albanian authorities to the European Commission for Democracy through law ("Venice Commission") to get their opinion on the law for the functioning of the Constitutional Court and Supreme Court.

Methodology

Quantitative methodology is used in this research. In order to make a comparison between the countries of the region (mostly focused in Albania), in the justice system and especially in the judiciary it is used the quantitative methodology. During the discussion section are presented the approval of the legal package and the progress of the transitional re-evaluation process of judges and prosecutors describing the results achieved. At the end of the research are given some factors that may affect the process and represent a risk for its effectiveness.

¹ Special Report of the Council of Europe Commissioner for Human Rights on Albania, (2014) 1, 16 January 2015. <http://www.coe.int/en/web/portal/home>

Discussion

The Albanian Parliament has set up a special parliamentary commission to analyze the current situation in the justice system, to determine the objectives of justice reform and to propose the necessary constitutional and legal changes in order to achieve these objectives. To carry out the above tasks, a High Level Expert Group (GENL) has been set up at the parliamentary committee, which is assisted by a technical secretariat. The task of these structures was to prepare an analysis of the current state of the justice system and the causes that led to it. At the end of the analysis phase, GENL has prepared another material (Justice Reform Strategy) which suggests the reform objectives and concrete solutions to the problems identified by the analysis. These materials, already approved by the special parliamentary committee, have served as a basis for drafting constitutional amendments, on which the opinion of the Venice Commission (KV) was sought. More specifically, the CC was asked for an opinion on whether the proposed constitutional solutions are in line with European standards and best practices in the respective fields.

The Venice Commission, on December 21, 2015, made public the ad interim opinion on the draft constitutional amendments drafted by the group of experts. According to the interim opinion the revised Draft Amendments contain sound proposals for the future institutional design of the Albanian judiciary; the text is by and large coherent and compatible with the European standards. The Venice Commission believes that the Draft Amendments may be finalised without further delay and submitted to the Parliament for voting. In view of the preparation of the final text, the Venice Commission recommends the Albanian authorities to pay attention to the following key issues:

- If the parties to the political process do not agree on the qualified majority required to elect lay members of the HJC, HPC, IQC and SQC, they may opt for a proportionate system guaranteeing the opposition a representation within those collective bodies, or any other appropriate model which would secure the opposition a certain influence in the election process;
- The Draft Amendments should specify the method of appointment of the Chief Special Prosecutor and accountability mechanisms in his/her regard;
- The mandate of the vetting bodies (the IQC and the SQC) should be significantly reduced in length; judges of the SQC, at the end of their mandate, should be able to integrate automatically the judiciary;
- The judges and prosecutors undergoing vetting should enjoy the right to complain to the CC about violation of their fundamental rights, with some reasonable exceptions dictated by the necessities of the vetting process;
- The powers of the international observers should be clarified; they should have procedural rights but no decision-making powers. The mechanism of transferring the

jurisdiction over the case from one panel/chamber to another should be revised. The Venice Commission reiterates that the reform of the judiciary cannot stop at the constitutional level; a whole package of implementing laws will be required in order to regulate in more details the operation of the HJC, the HPC, the vetting bodies, etc. The Venice Commission reiterates its readiness to contribute to this legislative work and hopes that the reform will be pursued in the spirit of constructive dialogue and adherence to the European values and best practice¹s.

The process of justice reform and the approval of legislative package

The justice reform produced the draft legislative package which was approved by the Albanian parliament. The following laws approved are:

Law No. 84/2016 “The transitional re-evaluation of judges and prosecutors in the republic of Albania²”. The purpose of this law is to determine specific rules for the transitional re-evaluation of all assesses, in order to guarantee the proper function of rule of law and true independence of the judicial system, as well as the restoration of public trust in the institutions of such system, according to the provisions of Article 179/b of the Constitution.

Law no. 95 date 6.10.2016 “On the organization and functioning of institutions to fight corruption and organize³d crime”. The purpose of this law is to ensure the functioning of the Special Prosecution Office, as a specialized prosecutor, to exercise the powers provided in point 1, of article 148 / dh, of the Constitution, efficiently and independently of any illegal influence, internal or external. Guaranteeing the functioning of the Independent Investigation Unit to investigate criminal offenses of corruption and organized crime, as well as other criminal offenses committed only by the entities provided in point 2, article 135, of the Constitution, independently of any illegal influence, internal or external.

Law no. 96 date 6.10.2016 “On the status of judges and prosecutors in the Republic of Albania⁴”. The purpose of this law is to determine the status of magistrates by providing rules regarding their: a) Rights and obligations; b) Recruitment and

¹ [https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-AD\(2016\)009-e](https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-AD(2016)009-e) pp 19

² <https://www.avokatipopullit.gov.al/media/manager/website/reports/LAW%20%20No.84%2016%20ON%20%20THE%20TRANSITIONAL%20RE%20EVALUATION%20OF%20JUDGES%20AND%20PROSECUTORS%20IN%20THE%20REPUBLIC%20OF%20ALBANIA.pdf> pp 1

³ https://klp.al/wpcontent/uploads/2020/02/liligj_nr_95_2016_per_organizimin_dhe_funksionimin_e_institucioneve_per_te_luftuar_korrupsionin_dhe_krimin_e_organizuar_s_1728.pdf pp 1

⁴ <https://ild.al/wp-content/uploads/2021/04/LAW-NO.-96-2016-ON-THE-STATUS-OF-JUDGES-AND-PROSECUTORS-IN-THE-REPUBLIC-OF-ALBANIA-AS-AMENDED.pdf> pp 1

appointment; c) Career development and the end of their mandate; ç) Ethical and professional performance evaluation; d) Disciplinary, criminal and civil liability.

Law no. 97 date 6.10.2016 “On the organisation and functioning of the prosecution office in the Republic of Albania¹”. The purpose of this law is to define the rules regarding: a) Organization and functioning of the Prosecution Office in the Republic of Albania; b) Requirements, criteria and procedures for the appointment of Prosecutor General; c) Relations of the Prosecution Office of general jurisdiction with other state institutions, public or private entities and the public; ç) The functioning of the Prosecution Office administration; d) Status of the Prosecution Office civil servants.

Law no. 97 date 6.10.2016 “On the organisation of the judicial power in the Republic of Albania²”. The scope of this law is to lay down the general principles and the rules regarding the: a) Organization and functioning of the court system in the Republic of Albania; b) Competences and seize of courts; c) Internal organization of courts; ç) Functioning of the court administration; d) The Status of judicial civil servant.

Law no 115/2016 “On governance³ institutions of justice system”. The object of legal regulation of this Law is to establish principles and rules regarding the organization and functioning of the High Judicial Council, the High Prosecutorial Council, the High Justice Inspector, the Justice Appointments Council and the School of Magistrate.

Law no 8577/2000 “On Constitutional⁴ court”. This law determines the rules of organization and functioning of Constitutional Court, the status of a judge, filing claims and reviewing them, principles and rules of constitutional judgment, obtaining decisions and their execution. For issues related to procedures not regulated by this law or by the Rules of Procedure of the Constitutional Court, the Constitutional Court takes into account the legal provisions governing other procedures, taking into account the legal nature of the case.

The implementation of the justice reform

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https://www.legislationline.org/download/id/9384/file/ALB_Law%20on%20Prosecution%20Office.pdf pp 1

2

https://www.legislationline.org/download/id/6930/file/Albania_law_judicial_power_2016_en.pdf pp 1

³<https://www.avokatipopullit.gov.al/media/manager/website/reports/LAW%20%20No.%201152016%20ON%20GOVERNANCE%20INSTITUTIONS%20OF%20THE%20JUSTICE%20SYSTEM.pdf>

4

https://www.gjk.gov.al/web/ligj_per_organizimin_dhe_funksionimin_e_gjykates_kushtetues_e_2016_1667.pdf

Transitional re-evaluation of judges and prosecutors or as it is otherwise known vetting, is one of the most important reform measures of the justice system in our country. Vetting is considered by the Venice Commission as an extraordinary, transitional and necessary measure in the conditions of Albania. His model is unique to Albania and will be realized only once. The vetting process has reached the stage when it has given the first concrete results, making it possible to begin to feel in practice, the effects of implementing justice reform.

The establishment and functioning of vetting institutions has been accompanied by some delays, which have directly or indirectly affected the functioning of a number of new institutions of the justice system. Delays in the establishment of other new justice institutions have reflected negatively also in the functioning of existing institutions, which have more limited powers until the establishment of new institutions. Also, this situation has created problems in terms of access to justice and the efficiency of the trial, especially in the High Court, where due to the number of insufficient judges as well as files carried over the years.

Due to the unpredictable results of the vetting process so far, with the dismissal of a considerable number of members of the highest courts, the implementation of justice reform has stalled, which needs to be unblocked in the interest of the public and citizens.

In this situation, although the effects of the reform are being felt in the direction of vetting, the justice system is working hard in order to return to the identity which is what this reform aims at the interest of the citizens. Another important result of the reform is also to meet international standards for an independent, efficient, professional, accountable and responsible justice system.

According to the Progress Report of European Commission for Albania "Good progress was made, with the continued implementation of justice reform and the vetting process. An important milestone was reached at the end of 2020, with the appointment of three new judges to the Constitutional Court. With seven judges in office, the Constitutional Court has regained its necessary quorum of minimum six members to hold plenary sessions, thus being fully functional and meeting the related condition for the first IGC. The comprehensive transitional re-evaluation of all judges and prosecutors (vetting) advanced steadily and delivered tangible results despite the challenges posed by the COVID-19 pandemic. The International Monitoring Operation (IMO), deployed under the aegis of the European Commission, continued to exercise independent oversight. As of 15 September 2021 the vetting institutions have completed 437 vetting cases at first instance, including all priority files. Of the 437 decisions, 298 decisions are final (i.e. after appeal). Overall, about 62 % of the vetting dossiers processed so far have resulted in dismissals and termination due to resignations by the judges or prosecutors or reaching the retirement age. The breakdown of first instance decisions is as follows: 176 dismissals, mostly for issues

relating to unjustified assets; 161 confirmations in office; 96 decisions on termination of the vetting proceedings; 2 decisions of suspension, with an obligation to attend training. The first-instance vetting body (IQC) has formally initiated investigations in all 766 pending vetting cases. The International Monitoring Operation (IMO) has continued to perform its oversight role in the vetting process and issued opinions on first-instance assessments, including 18 recommendations for appeal and two dissenting opinions. The vetting institution of Public Commissioners has followed all recommendations for appeal. In March 2021, 12 additional legal advisors were appointed to the IQC and six additional legal officers to the Special Chamber of Appeals, which has had a positive impact on the pace of proceedings. The continuity and completion of the vetting process by the vetting bodies must be ensured, in the light of the constitutional mandate of the IQC members and Public Commissioners. On 9 February 2021 the European Court of Human Rights (ECTHR) has ruled in the case of *Xhoxhaj v. Albania*, finding that the vetting process against the former Constitutional Court judge had been in line with the general principles and rights enshrined by the European Convention on Human Rights (ECHR) and overall proportionate. The ruling became final on 31 May 2021. The vetting institutions are expected to continue to refer to prosecution services cases where there are indications of criminal offences. To date 23 files have been submitted to the Special Prosecution Office (SPO), including 10 cases involving former judges of the High Court and the Constitutional Court. Out of the 23 cases, 21 investigations are ongoing, one investigation has been closed and one has resulted in a conviction. 10 additional cases have been referred to the competent district prosecutors' offices. Asset investigations are underway in all ongoing case"¹.

In the case of dismissals, it has been observed that IQC has decided to complete the revaluation process for the subject only based on the evaluation of assets criteria, not completing and not considering investigations on the evaluation criteria of figure and that of professional skills. The Constitution of the Republic of Albania stipulates that the vetting process requires control of all three components. According to the Article 4, point 2 of the law no. 84/2016, the process of revaluation would not be complete nor transparent to the public if the subject has not pass through all three filters of control.

One of the issues publicly discussed is whether the valuation of the assets is or is not carried in a very strict procedure by vetting institutions or whether this strict standard is not required. Vetting aims to remove of corrupt judges / prosecutors (but not in the criminal aspect). One of the indicators is the inexplicably accumulated assets. Question that arises is to what extent will be considered absences of reasonable documentation, lack of evidence for activities before 20 years, violations of financial legislation in the field of taxation, banking, asset registration.

¹ file:///C:/Users/user/Downloads/Albania-Report-2021.pdf pp 20

Changes in fiscal and financial laws, informal economy especially in the first years of democracy, lack of obligation to keep bills when this was not necessarily required by financial legislation as well as the fact that institutions have a certain period for the preservation of financial documentation, may have created difficulties for the subjects to save the bills of assets, especially before the approval of law No. 9049, dated 10.4.2003 "On declaration and control of assets, financial obligations and of some public servants". This is an issue that requires specialized training of vetting bodies. According to Article 19 of the vetting law, the bodies must have their own budget, in order to meet their requirements or needs per train.

The monitored hearings at the IQC reflected a high level of solemnity, which was observed in terms of logistics, communication realized through the media coordinator and the public, in the way of the conduction of the process (vetting body towards the subjects and their defenders), etc. For the media and the public who had an interest in attending these sessions and appeared in the courtroom before their opening, the hearing has been public in it all monitored case.

Transparency of the activity of the International Monitoring Operation is a controversial aspect of the process, as the public and the media are limited to receiving of information during the hearing, when IMO observers have questions about vetting subject. According to Annex B of the Constitution (paragraphs 1 and 3) the role of the IOM is expressly limited to the exercise of powers of a monitoring nature, without any decision-making role or related to the administration of the vetting process. IMO can check available files and information as well as recommend obtaining additional evidence or exercising the right to appeal. The IMO does not exercise the right to appeal but has the right to recommend.

A controversial issue concerns the transparency of the activity of International Monitoring Operation. The public and media are limited only in obtaining information during the hearing, when IMO observers have questions about vetting entities. In the reasoned decisions of the IQC so far, it results that the IMO's suggestions on the issue are not reflected in the decision. In these decisions, it is noted that the trial panels mention the fact whether IMO observers have suggested or not, but in some of them, this fact is not reflected either. In those cases where the provision of suggestions are mentioned by IMO observers, the nature of the decision is not specified which makes the role and contribution of the IMO in this process not transparent for the public. According to annex C of the Constitution, the activity of vetting bodies should be guided, among other things, by the principle of transparency.

Meanwhile, the transparency of the three vetting bodies have been at satisfactory levels and has been continuously improved through their official websites, where information on issues, sessions, hearings, appeals, decisions are published as well as have been occasional notifications about the press and the public regarding important aspects of their activity.

The transparency of the IQC but also the positive echo of this process by institutions, civil society, representatives of the diplomatic corps and international organizations have enabled an active participation of citizens in denouncing facts or circumstances that may constitute evidence in relation to re-evaluation criteria (Article 53 of the Law). IQC refers that by the end of May 2018, there were about 736 public denunciations in total. Generally IQC has noticed that the nature of denunciations has to do with the professional skills of judges / prosecutors and it is based on the wrong expectation of citizens on examining the merits of the issues referred to them. During the monitoring of the hearings, in some cases the reporter of case stated that during the administrative investigation of the vetting subject, there were complaints or denunciations from citizens who showed facts and circumstances related to components on the basis of which the vetting of subjects (judges / prosecutors) has performed. In all cases the identity of the citizens has not been made public, but data are presented only in terms of the number of complaints / statements and a brief description of the findings / analysis made in these cases.

Conclusions

Judicial reform, part of which is the vetting process, is an instrument implemented to clean the justice institutions from corrupted judges and prosecutors. For the first time between the Balkan countries it was first implemented Albania. Due to the importance and to the volume of the vetting process, which provides the transitional re-evaluation of about 800 subjects, it was expected the complexity and difficulties of this process.

The positive results of this process are the proper functionality of the courts, the elimination of corruption and the restore of public trust in the justice institutions. The vetting process has begun to give the first results. More than half of judges and prosecutors have been evaluated by the Albanian institutions under the monitoring of IMO. An uncorrupted judiciary in countries such as Albania, with fragile democracy is crucial for the functioning of the state.

This process hasn't been so easy for the Albanian justice. During its implementation High Court and Constitutional Court has not functioned properly because of the shortage of the judges. After their revaluation process they weren't confirmed in their positions. Many courts are not working properly because of the small number of judges that are confirmed in their duties. The School of Magistrates didn't find till now any mechanism to fulfill the shortage in the courts.

Another important finding regarding the effects of the vetting process is that in cases of dismissed judges and prosecutors the assets evaluated as unjust by vetting institutions should be return in the state budget. It is important only that the corrupted judges and prosecutors should be left out justice system. It is of the same importance that this category should be punished for the criminal offences they have committed.

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Efficiency of online learning and difficulties encountered. Case of Albanian students

Dritan Shoraj

Lecturer, Faculty of Economy, Department of Management, University of Tirana, Albania

Esra Kadiu

Faculty of Economy, Department of Management, University of Tirana, Albania

Abstract

The end of last century and the beginning of 21st century marked a significant evolution in information technology and virtual world as a whole, which influenced and dictated the way of living and working around the world, especially in the most developed countries. Thanks to this development, it was possible to cope successfully and continuously during Covid 19 pandemic. Education as one of the strategic and most sensitive sectors, due to Covid 19 pandemic, faced the online learning platform around the globe. In the US and in some developed EU countries, the online learning platform has been a practice applied in the past. However, for many other countries, including Albania, the online learning platform was something new that students and faculty had to face at any rate. Yet, are stakeholders ready to face the online learning platform? This study has analyzed some of the obstacles faced by students, upon the implementation of the online platform. It will be observed whether the efficiency of online learning will have the same efficiency as classical learning. These many other questions will be answered through an empirical and theoretical analysis that was made possible through an online survey, which surveyed 1672 students from all private and public universities operating in the Albanian territory. Multi-factor analysis will be performed through SPSS program, ANOVA test, and Chi-square (χ^2). Finally, some conclusions finalize this scientific study.

Keywords: *online learning, efficiency, satisfaction, performance, difficulty*

Introduction

Apart from the fact that information technology has largely boosted the development of society in all its spheres, the online learning platform has also taken great

advantage. As this teaching model provides flexibility and high-level participation of students to attend studies, as well as to share ideas between them (Swan et al., 2000).

Online or distance learning is a phenomenon started over the last decades of the last century in the developed EU&US countries. According to Dykman & Davis, (2008), this phenomenon has had an exponential growth at the beginning of new century. According to an analysis by Seaman, Allen & Seaman, (2018), students who follow online learning platform in the US, represent over 31.6% of all higher education students, including postgraduate students. An obvious fact is that students with disabilities prefer learning on the online platform rather than the traditional learning model (Mike & Harrington, 2013).

However, because of Covid 19, the development of online learning has become a normal process in all universities around the globe. Both in the countries that had already built the culture of online teaching platform, but also the countries that normally had never thought of this teaching platform at all, in conditions of the pandemic, although unprepared, many countries, including Albania, were forced to implement this platform, to successfully close the academic year that had just begun.

Using the online platform was a challenge for all stakeholders, including students, professors and universities, not to mention society as a whole. Yet, how will the above stakeholders deal with online platform? Will Albanian students be able to receive and disseminate knowledge online? What about educators, will they be able to transmit knowledge through this platform? Do Albanian universities have the adequate capacities to deal with this phenomenon? Meanwhile, do Albanian families have the adequate conditions and infrastructure to support their student children, to successfully overcome this new innovation? These and many other questions will be answered in this paper through the study hypotheses listed below.

H1: Infrastructure (electricity, computer and internet) affects the online learning platform.

H2: Online learning platform increases students' satisfaction to attend online classes

H3: The online learning platform increases the learning efficiency of Albanian students.

Literature review

According to some researches, online learning is a good opportunity to expand the audience with students, while significantly reducing their expenses (Carruth & Carruth, 2013). This target group of students may also benefit students from low-income families, students living in suburban or isolated areas, but especially students with disabilities, who prefer online learning to traditional teaching formats "(Verdinelli & Kutner, 2016, p.353). As student interaction increases, it encourages wider student participation and produces broader discussion in relation to the

traditional teaching platform (D. Smith & Hardaker, 2000). Dykman & Davis, (2008) believe that learning on the online platform is the most effective and efficient way to disseminate knowledge and increase cooperation between stakeholders. Even other researchers think that virtual interaction is less intimidating and more comfortable for students than the traditional teaching model (Warschauer, 1997), may encourage students to participate more in discussions (Citera, 1988).

On the other hand, there are perspectives against online learning platform, because according to them, today's students have the ability to absorb technology, but do not have the experience and academic skills to come up with high results in the online learning platform (Christ. 2007). Further, they worry as many students who follow online learning platform may feel isolated (Brown, 1996), confused and frustrated (Hara & Kling, 2000) and that student interest and learning effectiveness may fall significantly.

Thus, the transition from the traditional model of teaching to online platform, per se constitutes change and adoption with a new approach to teaching and learning of the three stakeholders, students, faculty and universities. That can often lead to conflicts while adopting new roles. The transition to the online platform requires, first of all, restructuring, profound change in the nature of teaching and learning (Zohar, Degani, & Vaaknin, 2001; Palloff and Pratt, 2000). In addition to roles, switching to the online platform vests the educators and students with different responsibilities from the traditional platform (Coppola et al., 2002; Crichton, 1999), without underestimating the cultural and personal sensitivity of stakeholders (Bruyn, 2004; Kleinman, 2005), which play a crucial role in the effectiveness of this platform.

Based on the findings of some researchers, the online learning platform is attractive for a variety of reasons. First of all, the flexibility of being able to follow a course in real time and in any kind of location. Therefore, the student is not limited to be present in the classroom at any rate. Secondly, according to them, the online teaching platform tends to cost less in general, compared to traditional teaching. All you need is a computer and internet access. Thirdly, the online learning platform is very attractive to students who are proficient in technology and enjoy virtual interaction (Carruth & Carruth, 2013).

Although the younger generation is called the digital generation or the age of internet, they have the ability and readiness to absorb technology but do not have the experience and academic skill to excel in online classes (Christ. 2007).

Research methodology

The research is based on the positivist approach with an objectivist ontological attitude and independent from us as researchers. The focus of this study has highlighted key components that affect online teaching. Therefore, a questionnaire was built, divided into 4 sections, for a total of 42 questions. The first section includes

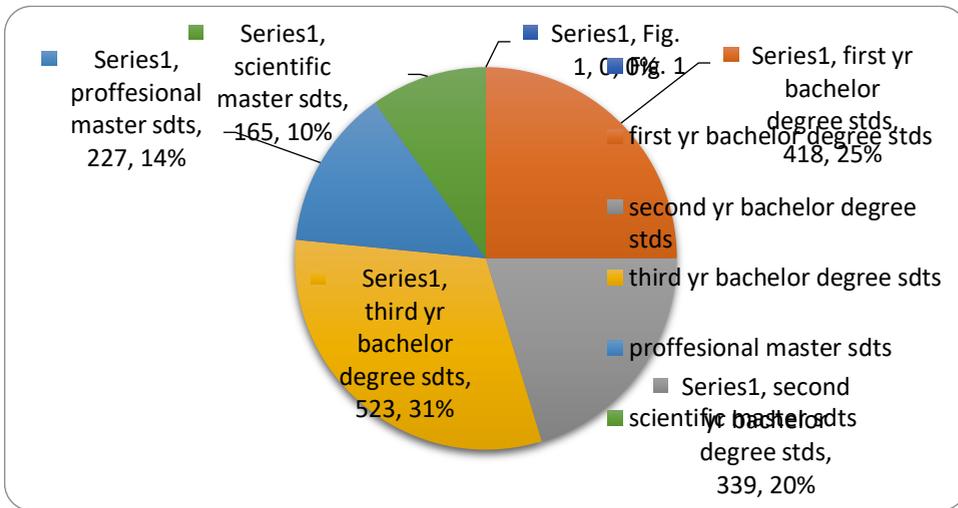
demographic data of the students, followed by other sections of the questionnaire, which support the analysis of study hypotheses.

The factual data obtained from the survey of 1672 students were used to confirm hypotheses. Through this quantitative study, the questionnaires were attributed values according to the Likert scale from 1-5, which corresponds to (1-not at all; 2 a little; 3-somewhat; 4- good / sufficient; and 5-very good / excellent). Data were analyzed through the statistical program SPSS (Statistical Package for Social Sciences, version 20). Mean, standard deviation, frequency and other statistical data have described the characteristics of sample population. The hypothesis testing was performed through the Chi-square test (χ^2), where the true statistical level is accepted at the quota of $p < .05$.

The sample population is represented by all students in Albania, including private and public universities, Bachelor level and Master level. While the sample of the study are 1672 students, of whom 1334 are female students, or expressed in percentage, about 79.8%, while the other ones are 338 male students or 20.2% of respondents. Data show that 1356 students or about 81.1%, are students in public universities and 316 students or about 18.9%, are students in private universities. QuestionPro format was used for the survey, in google, which was sent to the students' emails.

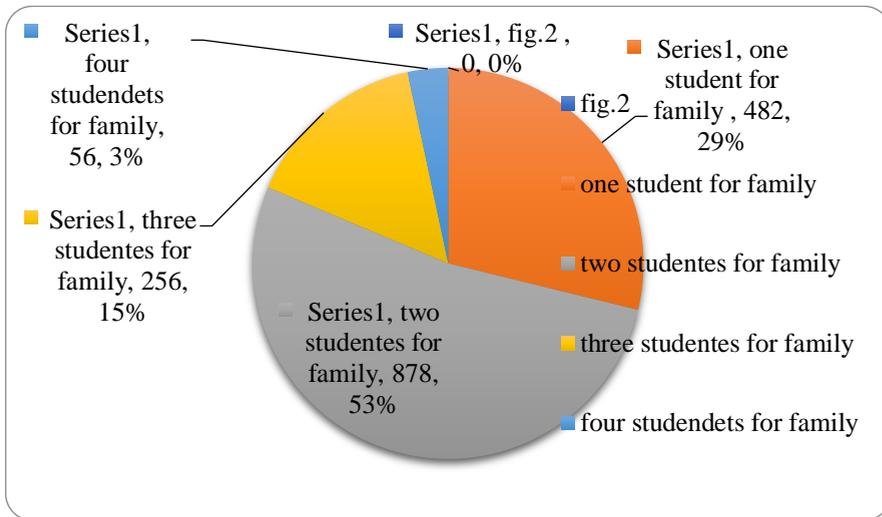
Data analysis

As mentioned above, 1672 students from all Albanian universities, public and private ones, were surveyed in total. The distribution of surveyed students is as follows: in the first year 418 Bachelor students were surveyed; in the second year 339 Bachelor students were surveyed; in the third year 523 Bachelor students were surveyed; while at the professional master level 227 students were surveyed; and recently, 165 students were surveyed at the scientific master level. It transpires that 1239 students (74.1%) are students coming from urban areas and 433 students (25.9%) are students from rural areas. Figure no.1 shows the stratification of the sample administered in the study.



In the meantime, we have attempted to explore the financial possibilities of students and their families to afford the online learning platform. In the course of data analysis, it follows that 578 students (34.57%) attend online computer learning, while the rest of 1094 students (65.43%) attend online learning via phones /tablets. This is because 59.09% of the total students have in their families another student /pupil brother /sister who attends studies at the same time. Obviously, the Albanian families are not capable to equip all their children (students) with a personal computer, thus making most students attend online education via mobile phone. Further, only 487 students (29,127%) of the respondents have a personal computer in their family, and the rest of 1185 students (70,873%) either do not have a computer in their family at all, or if they do, they should share it with other family members. Therefore, a serious problem encountered in this research is the lack of infrastructure needed to attend online learning.

In some families there are even more than one student/pupil. Therefore, according to the data, 482 students or about 28.8% of the total are the only students in the family. 878 families or about 52.5% of the total number of respondents have two students/pupils at home. 256 families or about 15.3% of the total have three students/pupils attending studies and 56 students or about 3.4% of the total are four students attending studies in one family. Figure no.2 shows students according to other family members studying at the same time.



Another issue encountered during data analysis is the persistent lack of internet and electricity. According to the study, 1225 students (73.27%) have encountered problems with Internet or electricity more than once during online learning. Further, only 447 students (26.73%) confirm there have been no shortages of internet supply or electricity during online learning, thus causing a negative impact on the attendance of online courses. Lack of internet or electricity has often affected the loss of interest and motivation of students to attend classes online.

Another component addressed in this survey is the comfort and convenience of students to be active part while learning on the online platform. Therefore, according to the data it follows that 347 students (20.8%) surveyed did not feel at all comfortable to be active during online learning, in relation to classical (face-to-face) teaching. Further, 321 students (19.2%) believe that they are a little comfortable to be active in online learning, while 405 students (24.2%) are somewhat comfortable. 354 students (21.2%) feel good in this type of teaching and only 242 students (14.5%), feel very comfortable in online teaching, compared to classical teaching. Hence, as it appears from the survey data, it is clear that only 14.5% of respondents feel very comfortable in the online learning platform.

As regards the difficulty of understanding hard concepts during online learning, it transpires that only 423 students or about 25.3% of students could understand everything online, the rest, 1249 students or about 74.7% thereof have encountered difficulties in understanding difficult terms or concepts while learning online. Therefore, as it appears from the data, $\frac{3}{4}$ of the students have encountered difficulties in obtaining information through online learning platform. Further, the pleasure/desire that students have to follow online learning platform shows that 498 students or about 29.8% thereof are not satisfied at all, 349 students or about 20.9% thereof are very dissatisfied and 669 students or about 40% thereof are

somewhat satisfied and only 156 students or about 9.3% thereof are fully satisfied, while 48.2% of the surveyed students would not recommend it at all, or would barely recommend the online platform to be followed by other students.

Furthermore, as regards the question of whether they are ready to face challenges with online learning, we see that there is a sort of hesitation on the part of students, as 20.5% of them are not at all ready to face challenges on the online learning platform, while 22.1%, are a little ready; 29.5% are somewhat ready; 18.4% are ready and only 9.5% are very ready to face challenges on the online learning platform. Hence, as data shows, it follows that most students are not ready to deal with the online learning platform. Even most of them consider attending online learning a waste of time. The survey shows that 42.1% of students believe it is worth little or nothing at all to attend online. Only 14.5% of them believe it is worth attending online education, while the rest are unbiased. Below, figure 4 reflects situation more clearly.

Pearson's correlation analysis for the main study variables

- H1: Infrastructure (electricity, computer and internet) affects the online learning platform.

Based on Pearson's bivariate correlation analysis for the main variables of the first hypothesis, it follows there is a positive relationship between the two dependent and independent variables. Independent variables (electricity, computer, and internet) positively / negatively affect the online learning platform. Specifically, the value of correlation coefficient between the two variables is 0.174 and the confidence level (observed alpha) is 0.0012 less than 5%, which means there is a positive statistically stable relationship between the two study variables.

H2: Online learning platform increases students' satisfaction to attend online courses

Following the Pearson bivariate analysis of correlation, in the second hypothesis of study, it was found negative relationship between the two variables. The correlation coefficient in this case is -0.089, which means that continuing to learn on the online platform reduces students' satisfaction in learning. Accordingly, there is a negative, statistically stable relationship between these two variables, where the confidence level is 0.023, which is less than 5% (*observed alpha <5% or p <.05*).

H3: Online learning platform increases the learning efficiency of Albanian students

Again, through the Pearson bivariate analysis of correlation, for the third hypothesis of study, it transpired that there is a negative relationship between the two variable of online learning and learning efficiency of Albanian students. The correlation coefficient in this case is -0.93. This analysis confirmed that there is a negative, statistically stable relationship between these two variables, where the level of confidence is 0.041, which is less than 5% (*observed alpha <5% or p <.05*). Therefore,

from the data it followed that online learning platform negatively affects the learning efficiency of Albanian students.

Chi-Square Test Analysis

H1: Infrastructure (electricity, computer and internet) affects the online learning platform

From the analysis of the Chi-Square Test it follows that the observed statistic with a value of 42,143, with a degree of freedom 16, and a security level of 0.021 that is less than 0.05 ($0.021 < 0.05$), confirms that hypothesis is applicable. What we understand is that electricity, computers and internet are key factors for the online learning platform. Therefore, the first hypothesis is proven.

• **H2:** Online learning increases students' satisfaction to attend online classes

Further, the analysis of Chi-Square Test, for the second hypothesis of study, showed that online learning platform does not increase the students' satisfaction to attend online classes. The observed statistics of Chi-Square Test assumes value at 37,204, with a degree of freedom 16, and a security level of 0.086 that is higher than 0.05 ($0.086 > 0.005$), showing that hypothesis is not applicable. Therefore, from the above data we understand that second hypothesis is not proven. Learning on the online platform does not increase the satisfaction of Albanian students to attend online classes.

H3: Online learning platform increases the learning efficiency of Albanian students.

Further, regarding the third hypothesis of study, the Chi-Square Test analysis does not prove it. Specifically, **H3** shows that it assumes value at the quota of 39.004, with a degree of freedom 16, and a security level of 0.164 that is higher than 0.05 ($0.164 > 0.005$), so the hypothesis is not applicable. What we understand is that the third hypothesis of the study is not proven. According to the data, learning on the online platform does not increase the learning efficiency of Albanian students.

Conclusions

During data analysis it follows that 578 students (34.57%), attend online learning on the computer, while the remaining 1094 students attend online learning via mobile phones /tablets. Meanwhile, only 487 students (29,127%) of the respondents have a personal computer in their family and the rest of 1185 students (70,873%) either do not have a computer in their family at all, or if they do, they should share it with other family members. In some families there are even more than one student. So according to the data, 482 students or about 28.8% of the total are single students in the family. 878 families or about 52.5% of the total surveyed have two students / pupils at home and 256 families or about 15.3%, of the total have three students/pupils attending studies and 56 families have 4 children students/pupils attending studies simultaneously.

Apparently, a serious problem encountered in this research is the lack of infrastructure needed to attend online learning. Thus, the inability of Albanian families to supply all their children (students) with a personal computer, makes most of the students attend online education via mobile phone.

The lack of internet or electricity has often affected the non-attendance of lectures / seminars, which has also influenced the loss of interest and motivation of students to attend classes online. Hence, as it appears from the data, most of the students are dissatisfied with their results through the online learning platform.

Therefore, as observed from the data, it follows that most of the students are not ready to deal with the online learning platform. Even a vast majority thereof consider attending online learning a waste of time, as a large number of students encounter serious problems in understanding difficult concepts during lectures on the online platform.

In the meantime, the research results showed that pursuing studies online adversely affects the satisfaction of students and the efficiency of learning of Albanian students. Thus, the above components have turned out to be essential components for achieving high results in studies for Albanian students.

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Surrealist Artworks as a Stimulus for Student Artistic Expression

Dubravka Kuščević

Faculty of Humanities and Social Sciences, University of Split

Marija Brajčić

Faculty of Humanities and Social Sciences, University of Split

Abstract

Works of fine art present an inexhaustible source of imagination, aesthetics, and creativity and can stimulate the development of personal creativity. Communication with artworks is possible if trained to understand and aesthetically experience them. It is therefore important to be in contact with the rich symbolic meanings of the language of art. If we want to educate students to be able to communicate and understand the cultural dynamics of art forms and to successfully communicate with art forms in the future and develop their visual art literacy, we should implement artistic educational content in higher education. Contact with artworks allows students to better understand their thoughts and feelings and, if using appropriate methods, an artwork can stimulate students to be creative. This paper investigates the influence of Surrealist paintings (made by Rene Magritte and Salvador Dali) on stimulating the artistic creativity of 46 first-year students of Early and Preschool Education at the Faculty of Humanities and Social Sciences in Split, Croatia. The results are presented using a qualitative methodology, i.e. a specific method of aesthetic transfer (perception, reception, and reaction) that brings the observer of the artwork into aesthetic interaction with the work and stimulates their experience of the work along with their creativity. Experiencing the artworks of Surrealism aroused students' emotions and aesthetic experience, allowing them to create background stories about the observed. Using various freely chosen art techniques, they also made their own artworks, which influenced the development of student creativity.

Keywords: *students, Surrealism, creativity, method of aesthetic transfer.*

Introduction

Artworks from different epochs and periods enrich our knowledge and point to universal human conditions and experiences, thus overcoming cultural barriers. A quality artwork contains complex layers of meaning, symbols, and metaphors. It is

open to various interpretations and moral and emotional reactions of the observer. Fine art with its many contents and meanings helps people to see the world and to introspectively look at themselves and their mental states, thus creating a dialogue and synergy between the creator and the observer. This is how the world of visual art continues to live in the future. Although an artwork was created in the past, the observer in the present experiences, interprets, and evaluates the observed contents and is inspired by the richness of the observed visual forms. Teaching fine arts is mainly concerned with the acquisition and development of productive abilities, focusing less on art appreciation abilities (Duh, et al 2012), yet appreciation abilities are important for the experience, understanding, and evaluation of an artwork. To experience an artwork adequately, it is necessary to find methods of presenting artistic content that will encourage observers to communicate and evaluate the art form. The method of aesthetic transfer is one of the methods enabling communication with the artistic contents from different time epochs and periods. Art appreciation implies the interconnectedness of the processes of perception and reception, which makes the basis of the method of aesthetic transfer. According to one well-known art historian, being exposed to artworks that present different circumstances, often inconsistent with the observer's standards, requires flexibility on the part of the observer. The adaptability of perception is one of the most precious fruits of aesthetic perception. The observer is encouraged to experience aesthetic levels at which they usually do not think (Arnhajm, 2008). The stimulus for thinking in the context of observing an artwork in Art classes is what gives educational value to the approach to the artwork. Previous scientific research: Brajčić & Kuščević (2012), Brajčić & Jujnović (2016), Brajčić & Perić (2019), Kuščević et al (2019), Brajčić et al (2020), Tomljenović & Bratović (2020), Brajčić & Sunko (2020), Sunko & Brajčić (2021) included the method of aesthetic transfer, which proved to be successful in working with school students and children of different ages. This paper describes the results of research stimulated by the method of aesthetic transfer in the approach to artworks of Surrealism in working with university students.

Surrealism as a stimulus for artistic expression

Surrealism as an art movement emerges in the 20th century art in Paris, France, and represents a vast field of activity in the art of the century, affecting not only fine arts but also film, photography, and literature. The poet and writer Andre Breton, the most important theorist and the major spokesman of the movement, published *The Surrealist Manifesto* in 1924, in which he pointed out that Surrealism implies actual functioning of thought, that is, psychic automatism in its pure state intended for verbal or written expression. He believes that thought should be dictated in the absence of any control exercised by reason, exempt from any aesthetic or moral concern (Lucie-Smith, 2003). Initially, Surrealism was not intended to be realized in the field of fine arts, but in verbal and written expression; nonetheless the ideas of Surrealism very quickly captured fine arts leaving a significant trace there. Ignoring

many aesthetic, moral, and life principles, the Surrealists found their inspiration in the complex cultural tendencies and currents of their time.

The Surrealist movement grew from the Dadaist movement founded in Switzerland (from 1916 to 1918) by artists of various profiles, poets, painters, and sculptors meeting in the Zurich Cabaret Voltaire. The Dadaists were “disappointed with all that European culture had created up to that time and which was devalued by the war violence with its massacres and utter insanity, so they decided to rise up against all values, even against the programs of previous movements that proved powerless despite all their rationalism” (Semenzato, 1991: 586). In the aftermath of the First World War, some Dadaists, including a particularly significant poet Tristan Tzara, moved from Zurich to Paris. Coming to Paris, these artists directly encouraged the creation of *The Surrealist Manifesto*. Surrealism inherited from Dadaism the defiance of reason and logic, while the rejection of thinking and the acceptance of the subconscious led the Surrealists to accept new ideas that were present in the culture of their time. Surrealists were inspired by the ideas, thoughts, and works of Sigmund Freud and his revolutionary explorations of the nature of the human soul, the role of dreams, and the power of the irrational in shaping personality. Once repressed and now liberated subconscious, unencumbered by the constraints of reason and logic, becomes the creative impulse of Surrealist painters. For them, the painting becomes a document of the state of consciousness. A peculiar feature of Surrealism is the symbolic fascination with the occult. Unexplored areas of the human spirit, neurotic nightmares, fantasies, hallucinations, visions, allegorical, unusual, fantastic situations become sources of inspiration for Surrealist painters. Ivančević (2001) states that Surrealists sought to explore the unknown areas of the human spirit and that is why their paintings seem to be a description of the dreams of strange visions. Surrealists rejected and ridiculed reality and logic, seeking to connect objects into completely unusual and unexpected relationships. According to Ivančević, Surrealists are interested in the subconscious, unexpressed states of the human spirit, contradictions, dreams, hallucinations, and fantasies. Thus, fantasy, irrationality, and imagination prevail in their paintings.

Novelties in Surrealist art experiments include frottage and a method of artistic expression called *Le Cadavres exquis*, seen in Surrealist drawings based on an old children’s game in which several collaborators finish a text or a drawing without knowing what preceded their part. Results of such artistic activities are unusually distorted drawings.

“Surrealism insists on the passive role of ‘the author’ in the mechanism of poetic inspiration. Surrealism exposes as counter-inspiring any active control through reason, morality, or aesthetic evaluation. The author can witness the origin of the

work only like a spectator – indifferently or passionately” (Mirenić-Bačić; Ratković, 2001: 42).

Picasso, Arp, Klee, Ernst, Miro, and De Chirico took part in the first joint Surrealist exhibition in Paris in 1925. For some of these painters, Surrealism was only a passing phase and a useful experience, while others found the fulfillment of their artistic aspirations in the movement. The most famous representatives of Surrealism in fine arts are Max Ernst, Rene Magritte, Joan Miro, and Salvador Dali.

Rene Magritte (1898 – 1967) studied at the Brussels Academy. He was first influenced by Cubists and Futurists, while around 1925, the influences of Surrealism can be felt in his works. Magritte uses the motif of dream and subconscious to create impressive compositions of unusual and strange confrontations of famous objects or events. By placing familiar objects in unusual circumstances, or rather, creating his compositions from incoherent and unrelated elements, Magritte creates fantastic Surrealist art with strong poetics.

After graduating from the Fine Arts Academy in Madrid, Salvador Dali (1904 – 1989) traveled and created in Spain, France, and the United States. He is a representative of veristic Surrealism, a style in the 20th century painting characterized by photographic accuracy in visual representations. In his works, the characters of people, animals, and things are presented grotesquely, hallucinatorily, and disproportionately. The painter in an absurd way uses associative reactions to depict states of dream, trance, neurotic outbursts, hysteria, subconscious complexes, and fear. Within the framework of his Surrealist work, Dali also engaged with film art.

Method of aesthetic transfer

Teaching methods represent quality communication in teaching and learning and are therefore essential in transferring and acquiring knowledge and skills with the aim of developing personal competencies and potentials (Duh & Zupančić, 2011). The method of aesthetic transfer is applied in acquainting the observer with an artwork, whereby it transmits not only knowledge but also aesthetic components in communication with observers. The personal impression is highlighted in the interaction, and it depends on different personalities of the observers. This is a qualitative method that assumes observation or analytical inspection along with the collection of data on the observed phenomena. This method of research takes place in three phases: 1. *perception*: perception of artworks with all senses, 2. *reception*: putting images into words, 3. *reaction*: activity, productive reaction to the artwork (Duh & Zupančić, 2011: 69). The first two phases are aimed at stimulating aesthetic experience, which encourages the cognitive component of aesthetic transfer, while reception occurs as a creative process of receiving and processing information, i.e. as a productive and creative response to the observed work, which makes cognitive and psychomotor components of aesthetic transfer.

Research methodology

Research aim and questions

The aim of the research was to determine the influence of the works of Surrealism (Magritte, Dali) on student motivation and creativity. In accordance with the defined aim, the following research questions were formulated:

Does the painting *The Son of Man* by Rene Magritte influence student motivation?

Does the painting *The Burning Giraffe* by Salvador Dali influence student motivation?

Does the painting *The Son of Man* by Rene Magritte influence student artistic creativity?

Does the painting *The Burning Giraffe* by Salvador Dali influence student artistic creativity?

Research sample

A total of 46 first-year students of Early and Preschool Education at the Faculty of Humanities and Social Sciences, University of Split, Croatia participated in the research. All students were females and gladly participated in this research, which took place during regular classes at the Faculty.

Method of data collection and processing and the research procedure

The data were collected using the method of aesthetic transfer and using a free interview. The interview was based on Hickman's questions related to the encounter with an artwork to encourage various answers and creativity of the observer's experience: What feelings does this work evoke in you? What does this work remind you of? After having learnt about the artist and the circumstances in which the work was created, what feelings does this work arouse in you now? What does this artwork mean to you? How does this artwork relate to issues that concern you as well? (Hickman, 1994). Students noted down and handed in their impressions in the reception phase. In the phase of data processing, we analyzed students' artworks according to the criterion of creativity accompanied with the observation of the research authors, and we performed a comparative analysis of students' creativity with regard to their works. In the results analysis section, we will present three works of fine art and three literary works that represent three categories of student works as illustrative examples: 1. highly creative student works, 2. artworks with pronounced elements of creativity, and 3. less creative artworks.

The creativity of artworks was assessed according to these six criteria: a) pronounced possibility of redefinition and recomposition, b) rich use of color and shape, c) unusual and imaginative presentation of motifs, d) rich art vocabulary, e) well used mixed media art technique, f) fluency in ideas during realization, d) associativity. According to the above criteria, student artworks were evaluated by the research authors.

The research was conducted from December 2021 to January 2022. A total of 8 hours of exercises were dedicated to creating works, i.e. four hours dedicated to each analyzed artwork. The research was based on a qualitative art and research method of aesthetic transfer, i.e. observation, description, and interpretation of situations that took place during all three phases of aesthetic transfer. Perception – students observed the artwork, reception – internal reaction to the artwork (expressed in words), and reaction – creation. Prior to the research, material, technical, and spatial conditions were prepared so that students could create their own artworks, and before the beginning of their work, appropriate art tools and materials were prepared. Students had the freedom to choose art techniques and materials.

Research discussion and results

Due to the scope of this research, we will present only two studies on student artworks in the results section. In each study, we will present exemplary works of students from the already described categories.

Study 1

On a big screen in the classroom, students were shown the painting *The Son of Man* by Rene Magritte. The students watched the presented painting in silence and with great concentration.



Figure 1. Rene Magritte, *The Son of Man*, 1964

1. Highly creative student work (Figure 2, Figure 3)

Perception phase – The student M. T. watched the painting in silence for ten minutes. The observation was followed by the reception phase, during which the student thought and expressed herself in words.

Reception phase – “The work by Rene Magritte entitled *The Son of Man* prompted me to think about the connection between knowledge and sin, to think about man and

freedom, and set an example of an interesting composition that sparked an idea of creating my artwork 'Slobod i Sloboda' ('Mr. and Mrs. Freedom')."

Reaction phase – The student was strongly motivated for literary expression and wrote a poem entitled "Slobod i Sloboda":

Slobod i Sloboda (Mr. and Mrs. Freedom)

Mr. Freedom started to bow to Mrs. Freedom, when she made him stand up and said Mr. Freedom, do not kneel before me, for you are equal to me.

Do not stand before me like before an icon, but take me to be your wife,
Your mistress and a friend and a part of your being.

Let's dance the divine dance together.

Along with the poem, the student successfully expressed herself in prose as well. She described her artwork in an essay in the following way. "Considering freedom and love as phenomena inherent to the human being, in my artwork I thought about the manifestation of freedom in a love relationship. In every love relationship, we ask ourselves how to determine freedom in the relationship between two people, is freedom defined by lovers, or does the freedom define the lovers? We can go with questions in all directions, that is exactly the goal of the work 'Slobod i Sloboda'. Becoming aware of freedom in a relationship, it is important to look at its roots, to know the beginning, thus a depiction of Adam and Eve, the first people who tasted the fruit from the tree of the knowledge of good and evil, who became aware of and tested their freedom. It is clear to us that this freedom entails a great sacrifice, but it becomes what God planned for man, to become faithful to his image, created in the image of God, to become the one who actively participates in his freedom and moves towards his liberation.

Along with the beginning, becoming aware of the creation is also important to us, God creates the world and the man, he shapes him and gives him a purpose. Man becomes an earthly creator, creates and builds, shapes and intends something, both to himself and to help others, for the purpose of liberation. He builds with his companion, with her, he shares his destiny and the results of his work, and together they nurture the fruits of their love. In the center of my work, there is an eye covered with a sphere with a slit in the middle. This part of the composition points out the importance of opening the view to the wider picture of reality, the importance of entering the core and remembering the beginning. Below, we can see the photograph 'Love Story', which shows two great lovers who were connected by art. They are painter Salvador Dali and his wife Gala.

Dali considered Gala his greatest muse and often dedicated his works to her, while she took care of many other parts of their lives, including tailoring his interesting suits.

They often emphasized the free character of their relationship. The freedom they enjoyed together and built together. In the photo, they hold Dali's work 'love story' as a sign of the importance of their love in the work of this artist. The black background with gold leaves represents the negative aspects and difficulties in relationships intertwined with golden moments of comfort, pleasure, fulfillment, and growth. In this work, I wanted observers to reflect on the character of freedom in a love relationship."



Figure 2. "Slobod i sloboda"

Figure 3. "Slobod i sloboda"

Student M. T.

Student M. T.

The student M. T. was inspired by Rene Magritte's work and made interesting and highly creative artworks, which she called "Slobod i Sloboda". Although the task was to create one artwork, the student created two of them on her own initiative. She chose the techniques of collage and acrylic.

2. Artwork with pronounced elements of creativity (Figure 4)

Perception phase – The student K. K. observed the painting carefully for 10 minutes.

Reaction phase – "This work evokes in me the feelings of discomfort and mystery because human gaze reveals the depth of a person's soul and character, because the moment we do not see a person's gaze we cannot see their intentions. This work reminds me of the phrase: 'The eyes are the mirror of the soul'. Because, as I have already mentioned, the gaze and the eyes reveal much about the person and their intentions, whether bad or good. The gaze creates a kind of intimacy and connection between the speaker and the listener and, although in some situations excessive gaze can create discomfort in us, making us feel as if the listener perceives and analyzes us,

when the person is not looking at us, this can create even greater discomfort because this can mean complete disinterest and we feel we talk 'in vain'. Gaze reveals a lot about human character, and what the person expects or wants from us. There is also a metaphor 'to smile with your eyes', which means a lot to us today because of the pandemic we are going through and because of which we have to wear protective masks. In these situations when we are having a conversation, we cannot see if that person is smiling, we can only hear it or see it when the person is 'smiling with their eyes'."



Figure 4. *BIND(ing)* student K. K.

Reaction phase – The student K. K. entitled her artwork, inspired by Magritte's painting, "BIND(ing)". She used a mixed media technique (watercolor, collage). She says: "Magritte's painting inspired me to create my work, because during the analysis I saw an apple covering the face, and realized that we can't see exactly what is needed to understand an important issue in today's world, i.e. 'Is a person good or evil?'"

The gaze also reveals whether the person is interested in conversation, in getting to know each other, or something completely different."

3. Less creative student artworks (Figure 5)

Perception phase – The student K. B. observed the painting carefully.

Reaction phase – "This work is seemingly simple and clear. But when observing it longer, it evokes in me a sense of mysticism and complexity."



Figure 5. Student K. B.

“The white shirt and suit remind me of formality and seriousness, while the four-leaf apple partially covers the eye and leaves an impression of playfulness. In addition, I later noticed that the elbow is turned in the ‘wrong’ direction. This observation clearly confirms the fact that only by looking closely can we know the details. Looking at the artwork, I think that there is no one right answer, or universal truth, because something seemingly simple, like this work, contains multiple hidden messages.”

Reception phase – The student called the artwork “Revelation” and verbalized the experience of making her own work inspired by Magritte’s painting in the following literary description: “With my work I wanted to get to the core of the human mind and what is in it and motivate the observer to think about their own thoughts that motivate them and because of which they love life. The key would mean we can lock our thoughts at any time and live on ‘autopilot’, unaware of ourselves.” The student did not give a name to her painting.

We analyzed all student works by comparing them according to the categories.

Table 1. Student artistic creativity in Study 1

Artwork category	f	%
1.1. highly creative artworks 2.3. 3.	17	36.96
4.artworks with pronounced elements of creativity	19	41.30
5.less creative artworks	10	21.74

From the observed results we can notice that students reacted positively to the method of aesthetic transfer, whereby 36.96% of students made highly creative artworks, 41.30% of students created works in which elements of creativity were pronounced, and 21.74% of students made less creative works. During the creation phase in this study, the authors noticed the students were highly motivated in expressing themselves. We can even point out that some of the students almost enthusiastically approached the creation. The students often recomposed and redefined their work, changed their original ideas, exchanged ideas and experiences with each other, and participated very actively and independently in the creation of their works. They also observed and commented on the works of their colleagues with great curiosity. The verbal and written reactions of the students to the observed painting indicate the strong experience of the observed content that stimulated the students to express themselves in fine art and literature. We can conclude that Rene Magritte's *The Son of Man*, presented by the method of aesthetic transfer, encouraged students to creatively express their thoughts and ideas. These results coincide with the results obtained in previous studies conducted by the authors (Brajčić & Kušević, 2012; Brajčić & Juhnović, 2016).

Study 2

On a big screen in the classroom, students were shown Salvador Dali's painting *The Burning Giraffe*.



Figure 6. Salvador Dali, *The Burning Giraffe*, 1937

Highly creative artwork (Figure 7)

Perception phase – The student M. Š. observed the painting carefully for 10 minutes.

Reception phase – “This artwork arouses in me the feelings of restlessness, fear, interest, and wonder. The feelings of restlessness and fear are mostly caused by the depiction of a giraffe in flames and two terrible female figures, but also cold, dull colors. The work is mystical and full of symbolic meanings, and therefore arouses a sense of interest and wonder (mostly because of the drawers). It reminds me of an apocalypse or a dream. The apocalypse because the painting shows catastrophic scenes that create panic, nervousness, and fear. The dream because the scenes are very unusual, insane, irrational, and imaginative. This work for me represents doom, death. Each drawer symbolizes an open, unfinished chapter in life that haunts and eats the female figure. Her pain and helplessness are shown not only in the drawers but also in the bloody hands and head, and knives stabbed in her back. There are also unusual and imaginative real-life motifs like a burning giraffe. It looks like a symbol of suffering and pain. Each of us has some problems and doubts from the past that torment and follow us.”

Reaction phase – “The inspiration for this work was Salvador Dalí’s painting *The Burning Giraffe* which conveys to the observer various intense feelings and the symbolism behind the work. Thus, Dalí’s work makes us think about important life issues, conveys his feelings, and sends a certain message. My work was created with the aim of conveying a certain meaning and pointing out the importance of the relationship between human and nature. A woman’s head would represent the human race, and a branch would represent the nature.”



Figure 7. *Fusion*, student M. Š.

“The point is that without the nature, the survival of the human race would be questionable. We must care more about nature and environmental protection because the nature is an integral and important part of our lives.”

2. Artwork with pronounced elements of creativity (Figure 8)

Perception phase – The student P. M. observed the painting carefully for 10 minutes.

Reception phase – “The painting evoked undefined sad feelings in me, perhaps because of the colors, suggesting suffering. Struggle is definitely the word that I think best describes this painting made by the great artist Dali. Every time I look at it, I see some new detail that changes my whole view of the painting. When I summarize everything, I think that for me this work represents both mental and psychical struggle. I would say that physical struggle is symbolized by two abstract figures. Their blood, flesh, and bones depict the struggle in the cruelest way. In the background, there is a small burning giraffe. This for me presents a mental struggle, the feelings, and mental suffering experienced by the dominant figures in the painting. Now that I have become aware of my feelings, I am sure that this painting has aroused in me negative feelings that I can associate with violence and lack of tolerance, which I do not support by any means.”

Reaction phase – “The title of my work will be ‘W&P (Water and Peace)’ where I will try to show a figure from another world that has found water and is no longer burning. The red color inspired by Dali’s painting represents pain and sacrifice. That color is

on the hands of my figure, all over her body, and around her. The figure finds a source of water (peace) which in my painting is represented by black details such as the stone spring, blue colors of the drops of water, and blue details in the right corner which are in contrast with the upper left corner of this work and symbolize peace and positive emotions.”



Figure 8. *W&P (Water and Peace)*, student P. M.

“The person who finds peace (perhaps including me too) has found all, so my improvised figure will find their water accordingly.”

3. Less creative artworks (Figure 9)

Perception phase – The student P. L. observed the picture carefully for 10 minutes.

Reception phase – “‘The Burning Giraffe’ by Dali makes me feel uneasy. The work reminds me of a dream, as do other Dali’s works. Nothing makes sense. Due to the composition in which the character in the foreground goes towards us, it is easy to get involved in the image, a dynamic has been created according to which it seems that I am also a part of it.”

Reaction phase – “The title of my work is ‘The Game of the Subconscious’. Dali’s works as well as the direction of Surrealism are generally known for presenting the dreams.”



Figure 9. *The Game of the Subconscious*, student P. L.

“Usually, the elements of Surrealist works are contextually unrelated actions that merge into one. My work has shown something similar. The world of dreams and all those images that emerge from the subconscious while we sleep without any special explanation. As I dream, sometimes I feel like something is coming towards me and makes me feel heavier. Nothing is crystal clear, but the feeling is real and familiar.”

Analyzing the student artworks in Study 2, we noticed that the artistic and literary creativity of students was stimulated.

Table 2. Student artistic creativity in Study 2

Artwork category	f	%
1.1. highly creative artworks	14	30.43
2.3.		
3.		
4.artworks with pronounced elements of creativity	23	50.00
5.less creative artworks	9	19.57

Highly creative artworks were noticed in 30.40% of students, while 50% of students made works in which elements of creativity were pronounced. Only 19.57% of students made less creative works. Students also showed high motivation during their work, they communicated with each other and actively participated in the

creation. The students changed their creative aspirations, constantly looking for changes, alterations, for an artistic expression that would best suit their ideas, curiously observing the artistic ideas of their colleagues. During the creative process, the students communicated with each other exchanging ideas, and thus became co-creators of other works. We conclude that Salvador Dali's painting *The Burning Giraffes* stimulated the motivation and creativity of students.

These results coincide with the results obtained in previous studies by authors in which works of modern artists of the 20th century were used as a stimulus (Brajčić & Kuščević, 2012; Brajčić & Jujnović, 2016).

Conclusion

The time we live in is the time of the image, the time of visual communications, and visual culture. Education should thus pay special attention to the development of student visual and artistic skills and abilities within the overall development of personality.

Using artwork as a stimulus in motivating students' artistic expression is an interesting issue in art pedagogy that has been insufficiently researched. We conducted the research entitled "Surrealist Artworks as a Stimulus for Student Artistic Expression" to contribute to investigating student perception, reception, and reaction to Surrealist artworks. In this research, the positive effects of Surrealism on the motivation and creativity of students were determined. The method of aesthetic transfer stimulated students' art appreciation and productive abilities releasing their creative artistic and literary potentials. Furthermore, relying on our observations, we can conclude that this method encouraged students to act, to be motivated, independent, and autonomous. It also affected their aesthetic experience. Through their artistic and literary works, students developed artistic communication skills and cognitive-emotional competencies. The results showed that artwork is an inexhaustible source of knowledge that enhances originality and communicativeness through language, symbols, and images, creating new links visible in new creative forms. Students transformed their visual and artistic experience in contact with the works of Surrealism into their own research and creation of artistic and literary works.

The use of the method of aesthetic transfer, applied mainly in work with preschool children and school students, has proven to be effective and scientifically justified in working with university students as well.

Future research on the application of the method of aesthetic transfer as a stimulus for the development of creativity could include other contemporary artists and art movements of the 20th century. Such research would make a significant contribution to stimulating students' creativity in visual art education.

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Valuable Bioactive Compounds Extracted from *Ceramium rubrum* on the Romanian Seaside with Medical Interest

Ana-Maria-Laura Dragan

University of Medicine and Pharmacy *Carol Davila* IOSUD Bucharest

Rodica Sirbu

University of Medicine and Pharmacy *Carol Davila* IOSUD Bucharest

Emin Cadar

Ovidius University of Constanta, Faculty of Pharmacy

Abstract

Recently in science, seaweeds are widely used because of their relevant compounds and potential origin of antimicrobial, antiviral and antioxidant activity. Seaweeds are rich in the trace elements and essential minerals that are hard to find in terrestrial plants. *Ceramium rubrum* is one of the red seaweeds that can be found in the Black Sea on the Romanian coast that has not been enough studied for their bioactive compounds. Identification and quantification of the biomolecules is carried out by specific methods. The compounds that have been found are cumarines, sterols, flavonoic aglcoles, triterpenes and polysaccharides. Is well known that this kind of biomolecules are very important in the pharmaceutical industry. Ozes and poliozes, reducing compounds and catehic tanin we're also identified from the red algae.

Keywords: *Ceramium rubrum*, red seaweed, antioxidant, flavonoids, polysaccharides, bioactive compounds.

Introduction

Nowadays, worldwide a remarkable interest of medical and pharmaceutical professionals is focused on the superior use of natural resources for therapeutic purposes. Marine ecosystems have productivity and diversity that are very important in maintaining the health of the marine and terrestrial environment and provide important sources for the cosmetics, food and pharmaceutical industries. They represent about 70% of the Earth's surface. Although the literature presents a wide range of medicines from marine resources, it is modest when it comes to the pharmaceutical use of marine resources in the Black Sea. Recently, a real field of

investigation has been developed for biological substances in marine organisms, as they have been found to be a rich source of valuable compounds. The importance of algae and phanerogams in the general bioproductivity of the marine environment, especially in shallow waters, is becoming increasingly evident both economically and ecologically. The algal macroflora of the Black Sea totals a number of 277 species of algae, of which the most common are green and red algae. Although green algae have been extensively studied for their properties, red algae have not received much attention and I believe that they should also be fully explored. The research developed in this paper treats the red seaweed existing in the territorial waters of the Romanian coast. The capitalization of seaweed is of particular importance, being a valuable resource for the medical-pharmaceutical field [1].

Ceramium rubrum belongs the red algae group: Div. *Rhodophyta*, Subcl. *Florideophycidae*, Fam. *Ceramiales*. This group includes pluricellular algae that can be found in an aquatic environment and it grows spontaneously and abundantly in the Black Sea [2]. The red algae (*Rhodophyta*) make a distinct photosynthetic eukaryotic lineage which consists of around 6,000 species that includes unicellular to large multicellular taxa. Red algae differ from other eukaryotes by the lack of flagella and centrioles during their entire life cycle. Because of their particular life cycles (e.g., triphasic life cycle: gametophyte, tetrasporophyte and carposporophyte phases), *Florideophyceae* is one of the most important algal groups in marine environments [3]. Due to the environmental conditions, the species of *Ceramium* are easily differentiated. It is probable to provide different names, if the examinations of the samples are not done prudently [4]. The genus *Ceramium* is found in the northern sector of the Black Sea coast, this being an opportunistic species that prefers most types of substrates from the extended platform of sarmatic limestone to live or dead mussel shells. This is a constant presence on our coast and develops appreciable biomass even in waters with a high load of nutrients. All year long, generally in spring and summer, red alga richly develops along the entire Romanian coastal area, on rocks, at depths of 0,5-4,5 m [5][6][7].

Polyphenols, vitamins, polysaccharides and polyunsaturated fatty acids are the most valuable and researched bioactive compounds from marine algae. Due to the presence of non-digestible polysaccharides in the algal cell wall, algae can be considered a very good source of dietary fibers. Polyphenols are a class of compounds commonly found in plant foods, such as, vegetables, fruits, spices, herbs, tea, etc. They can neutralize harmful free radicals that would damage the human cells and increase the risk of condition like cancer, heart diseases and diabetes, they can act as antioxidants. Polyphenols are also thought to reduce the origin cause of the most chronic illnesses, the inflammation. They can be further categorized into 4 main groups: polyphenolic acids, polyphenolic amides, flavonoids and other polyphenols. Flavonoids are an extensively distributed group of structurally associated compounds with a 2-phenylchromane skeleton that have, in the C2 or C3 position, a phenyl substituent.

The subclasses that they are divided depends on the degree of oxidation of the central pyran ring. Flavonoids play an imperative role in plants as resistance and warning compounds in pathogenesis, symbiosis and reproduction, they are of physiological and biological importance. In some recent studies, phenolic acids and specifically flavonoids have been described to exhibit various effects including antiinflammatory, antioxidant, anti-cancer, antimicrobial, anti-allergic, anti-thrombotic, anti-atherogenic and estrogenic, vasodilatory and capillary fragility and permeability lowering actions [8]. Polysaccharides are omnipresent biopolymers that can be found widely in nature. These are polymers formed with glycosidic linkages of simple sugars, which are monosaccharides. Polysaccharides can be found in different types. Distinct chemical and physical properties exist because of the structural differences. These are natural biodegradable biopolymers, nontoxic. Algae are an important source of polysaccharides, especially the red macro algae. They are largely used as stabilizers, gelling agents, emulsifiers and as thickeners in food products. Another important group are sulfated polysaccharides. These can be valuable ingredients in pharmaceutical, nutraceutical and food industry because they can act as defensive barrier against phatogen. Agar and carrageenan are the most relevant sulfated polysaccharides and both are encountered in red algae [9]. Polyunsaturated fatty acids (PUFA) play an important role in metabolism, as a regulatory molecule and as a fundamental component of all the organs membranes. These have more than one double bond in their backbone. In recent studies it has been demonstrated that PUFA have anti-cancer and antiinflammatory effects and they are regulators of lipid metabolism, notably through epigenetic mechanisms [10]. Potential sources of polyunsaturated fatty acids are the marine algae [9].

Materials and Methods

Algal Material

The marine biomass was selected manually and exposed to a pretreatment that consisted of repeated washings with potable water and finally with distilled water. Macroscopic and microscopic examinations were one of the investigations that were performed on the fresh product. Other examinations that the algal biomass was selected for are chemical, physico-chemical and microbiological analysis. For this matter, the algal material was dried at temperatures between 25-35 degrees. The dry product, by grinding, was ground to a powder and was passed through a 0.5 mm sieve to obtain a uniform powder [11], see Figure 1.

The algal flora was harvested from the Black Sea coastline in may-november period, from water at a distance of 5-25 m from the shore, from the areas of Eforie Nord, Eforie Sud, Costinesti, 2 Mai, Mangalia, Vama Veche, Năvodari and Constanța Casino.



Figure 1. Red algae in the algal colony

Macroscopic Examination

The first phase in the study of algal products is the macroscopic examination. This is done by examining the whole algae (cauloid, phylloid and rhizoid) both with help from a magnifying glass and with the eyes to detect its color, size, appearance, taste and smell [1][5][12]. From this macroscopic examination it was found that *Ceramium rubrum* is a red alga with a 10-15 cm height and with a filament like thalle, fixed on the substratum through the rhizoid, having a bushy appearance, with ramifications. It has an articulate aspect because of the filaments that have dichotomic and are formed of a single row of connecting cells. The entire surface of the thallus is covered by cortical cells that are formed by the continuous division of periaxial cells produced and located in the nodal area. Tow short twisted branches are situated at the end of each filament [5-7][13].

Microscopic Examination

Whole, fresh algae was used for microscopic examination and kept in seawater jars throughout the analysis. The algae were placed in a bowl of clean water after being rinsed, very well, with distilled water to remove impurities. The materials that are used in this examination are fragments of thallus from the red seaweed, a Microscope and Micro photomicroscope (10/0.25), forceps, blades, spatulate needles and Petri dishes. The microscop analysis was performed directly on fresh thallus fragments obtained by slicing it with a slice and brought into a Petri dish with distilled water, because the macrophytic algae species have single-cell or two-layer thallus.

There, in the transversal section of the thalle, in the center, is a large cell, surrounded by eight pericentral cells, which are also surrounded by another layer of cortical cells. There are large strip-shaped plastides in the central cell.

Physico-chemical Methods

Qualitative chemical analysis requires the successive and selective extraction of plant products with solvents of diverse polarities and separation using chemical methods,

followed by specific reactions with which to classify different groups of active compounds. The active principles are extracted first in order to perform the global chemical analysis. From the algae product sprayed with a non-polar solvent (chloroform, ethyl ether, petroleum ether, benzene, hexane, etc.), then with a medium polarity solvent (ethanol, methanol) and finally the following are obtained: a sol. etheric extractive, a sol. alcoholic extract and a sol. aqueous extract. In the alcoholic and aqueous extract, the hydrophilic compounds are determined, and in the etheric one, the lipophilic compounds [14-17]. The three solutions are analyzed separately, using methods corresponding to the physicochemical properties of each group of active principles [18].

Analysis of the alcoholic extractive solution

The ether-depleted algal product was used and brought to the water bath to remove traces of ether. The plant product was extracted with methanol (2 x 100 mL) by refluxing for half an hour. The combined methanolic solution was concentrated to 50 mL by distillation of the solvent and partitioned into 2 parts. One part is subjected to hydrolysis with 15 mL 10% HCl on the electric nest at 3 grade for 30 minutes and the other part is used to identify the active ingredients on the non-hydrolyzed solution (25 mL). For further extraction, the methanol depleted plant product is stored [19].

Analysis of the ether extractive solution

Weighed 20 g of freshly sprayed vegetable product from the red algae, which was initially

extracted with ethyl ether (2 x 100 mL) by refluxing for 15 minutes. The resulting solutions were filtered and collected in a fluted cube flask, after each reflux. Then the combined ether solutions have to be concentrated on a water bath to 50 ml and the first solution is obtained. It is used to perform reactions characteristic of lipophilic compounds [20].

Analysis of the aqueous extractive solution

Was used the remaining plant product from the alcohol extraction which was dried and then extracted with 100 mL of water in a water bath at 90 ° C for 30 minutes.

Results and discussions

Following the identification reactions discussed above, and the following results were obtained and they can be seen in Table 1.

Table 1. The reactions used to identify bioactive compounds [1]

Analyzed solution	Reactions	Identified active compounds
Alcoholic extract	Iron Chlorure reaction	Catehic Tanin
	Liebermann-Bouchard	Triterpenic heterozides
	Fehling	Reducing compounds
	Borntrager	Antracenozide
	Fluorescent UV($\lambda=365\text{nm}$)	Cumarines
Etheric Extract	Fluorescent UV($\lambda=365\text{nm}$)	Cumarines
	Liebermann-Bouchard	Sterols, Triterpenes
Aqueous Extract	Foaming	Soapozides
	Fehling	Reducing compounds
	FeCl ₃	Catehic Tanin
	H ₂ SO ₄ conc.+tymol	Ozes and poliozes

In the non-hydrolyzed alcoholic solution

The reaction with ferric chloride is blackish green, so positive for catehic tannin in this species *Ceramium rubrum*. The reaction with Styassny's reagent is negative. The analyzed species does not contain alkaloids because the residue obtained after evaporation of the non-hydrolyzed alcoholic solution was taken up with a 2% aqueous HCl solution then basified with ammonium hydroxide and extracted with ether; after evaporation of the ether solution and resumption of the residue with 2% HCl, the Mayer and Bertrand reactions were carried out and they were negative. Reducing compounds are present because by performing the Fehling reaction a reddish-red precipitate was obtained. In *Ceramium rubrum* the reaction with ninhydrine of the aqueous solution obtained from the residue of the alcoholic solution was negative.

In the hydrolyzed alcoholic solution

The Liebermann - Bouchard reaction performed on the residue of the hydrolyzed alcoholic solution did not result in a green - purple coloration, so triterpene

heterosides are not present. The residue obtained after evaporation of the hydrolyzed alcoholic solution is treated with 50% methyl alcohol; the Shibata reaction on the alcoholic solution was positive, which reported the presence of flavonoids in this species. Antracenozides are not detected in this red alga, a result of the negative Borntrager reaction. The solution shows fluorescence under the incidence of UV radiation, so cumarines are identified.

In the etheric solution

From the Lieberman-Burchard reaction performed on the ether extract, which came out positive, it appears that sterols and triterpenes are present in the analyzed algae. Carotenoids are identified in this species by the Carr-Price reaction which was positive. The residue obtained by evaporation of the ether extract was taken up with methyl alcohol; the alcohol solution was reacted with Shibata; the reaction was positive, so they contain flavonoic aglicoles. Upon evaporation of the ether extract, a residue was obtained which was subsequently taken up with aluminum hydroxide. Borntrager reagent did not stain the solution orange, which shows that the alga does not contain endemoles. The same residue taken up with ammonium hydroxide show intense fluorescence under UV radiation, so *Ceramium rubrum* contain cumarines.

In the aqueous extractive solution

The aqueous extractive solution is evaporated to the residue, then a few drops of concentrated sulfuric acid and an alcoholic solution of thymol are added - a red coloration is detected which attests the presence of oozes and polioozes. The identification reaction for starch (with Lugol's reagent) was positive for this red alga. The reducing compounds are found in *Ceramium rubrum* due to the Fehling's reaction which was positive. The foaming reaction of the soapozides was negative, that means soapozides are missing from the analyzed species. The basic alkaloids were not identified, because the reactions of Mayer and Bertrand were negative. The aqueous extractive solution reacts with dilute FeCl₂ and a blackish green color appears which confirms the presence of catehic tannin.

In Table 2 are presented the results of all identifications.

Table 2. The compounds detected in *Ceramium Rubrum*

The seaweed	Cateh ic tanin	Oozes and poliooze s	Reducing compoun ds	Soapozide s	Flavonoi c aglicoles	Cumarine s
<i>Ceramium rubrum</i>	++	++	+	-	+	+

Polysaccharides are usually the major component of red algae. The various polysaccharides are the main composition of the cell walls of algae. The most important polysaccharides in red algae include carrageenan and agar along with other identified polysaccharide compounds, see Table 3.

Table 3. Polysaccharides identified in red algae

Polysaccharides	Red algae
Agar	X
Carrageenan	X
Cellulose	X
Starch	X
Manan	X
Parphyran	X
Galactan sulphates	X
Xylenes	X

Carrageenans are the essential components of red algae cell walls and are linear polysaccharide chains with half sulfate esters attached to the carbohydrate unit. They are divided into three forms: lambda, iota and kappa, depending on the degree of molecular sulfation [21], see Figure 2.

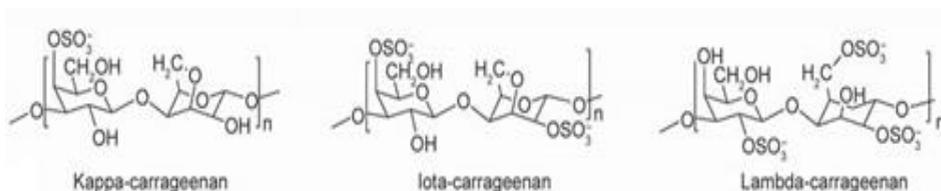


Figure 2. The structures of the three forms of carrageenan

Carrageenan is a sulfated anionic polysaccharide with a straight vertical column structure formed by bonds that alternate 3 β D-galactopyranose with residues of 4- α -galactopyranose. Many of the α -galactose residues may be in the form of 3,6-anhydrous derivatives. Sulfated ester, methyl and acetal groups of pyruvic acid and sometimes monosaccharides can substitute these derivatives.

The biological activities of carrageenan

They have been tested for the treatment of hepatitis A, respiratory diseases, the H1N1 flu strain and the African swine fever virus.

The superoxidase dismutase biosensor, which is modulated by the k-carrageenan gel membrane, has been developed and has been reported to test the cleansing properties of commercial drugs. It has been used in the manufacture of the microbial temperature-time-environment indicator [22].

Agar-agar is obtained from a series of red seaweeds (aragophytes) and it is an organic product. It is formed of galactoside residues esterified at C6 with a sulfonic group. See Figure 3. Agars are a mixture of linear polysaccharide agarose, with a heterogeneous mixture of smaller molecules called agaropetin [23], see Figure 3. It has a very high gelling power.

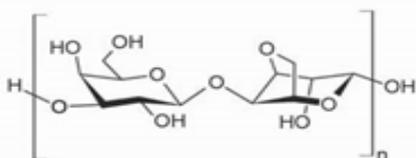


Figure 3. The structure of the agar

The biomedical activity of the agar

Agar has been extensively used as a gelling agent in the food industry due to its hydrophilic colloidal properties, which is obtained from a mixture of agarose and pectin agar and it has the ability to form reversible gels easily by cooling the hot aqueous solution. It is frequently used as a microbiological medium to ensure the firmness of the gel. The resulting gels are transparent, relatively brittle, clear and they

melt on heating. Despite its degradability and excellent gelling power, agar has not been widely used due to its poor aging properties.

Photodegradation and fluctuations in ambient temperature and humidity can modify the crystallinity of the agar, leading to the production of microfractures and the fragility of the polymers [24-26].

Conclusions

From this study, the following conclusions can be drawn: From the three extracts obtained, etheric, alcoholic and aqueous, a series of particularly important bioactive compounds, from a pharmaceutical point of view were highlighted, such as catechic tannin, reducing compounds, cumarines, flavonoic aglicoles, ozes and poliozes. Variations in the marine ecosystem along the Romanian Black Sea coast, as well as temperature variations can lead to different results for algae species compositions, so carefull monitoring is needed each year to track changes in seaweed. These are categories of compounds of great pharmaceutical interest that can be used, with good results in the future in topical pharmaceuticals.

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Use of ICT in improving air quality (The case of the city of Tirana)

Luan Bekteshi

Faculty of Applied Science and Economics, Barleti University, Tirana, Albania

Abstract

Nowadays society faces rapid technological developments, increased innovation as well as increased consumption. A tendency of society towards consumerism is the continuous increase of vehicles circulating on urban, interurban and rural roads. The high number of vehicles in circulation and their technical condition has continuously affected the air quality due to the emission of different levels of gases. Managing air quality in residential centers is a complex challenge and requires at the same time the management of urban traffic, finding a balance between vehicle traffic, safety and meeting the needs of urban residents. Information technology has changed many industries, from education to healthcare and is already contributing to improving the quality of life of residents through systematic control of the environment and the measurement and management of air quality parameters. Air quality management is a global challenge for governments, local governments and citizens. Many governments and municipalities in different cities are spending significant amounts on improving air quality and pollution management. In order to control and manage air quality, the assistance provided by the use of ICT has made possible the installation of monitoring stations which enable citizens to have real-time access to the measured indicators.

Keywords: *ICT, monitoring, air quality, strategy, particulate matter*

1. Introduction

Clean air is essential for our health and the environment. But since the industrial revolution, the quality of the air we breathe has deteriorated significantly - largely as a result of human activities. The increase of industrial and energy production, the burning of fossil fuels and biomass, volatile organic substances, particulate matter as well as the dramatic increase of traffic on our roads, all contribute to air pollution in our cities, which, in turn, can lead to serious problems for both health and the environment.

Air pollution, as a result of continuous urbanization, industrialization and increased consumption, is becoming a worrying problem for governments, local government, civil society and citizens themselves.

Solutions exist, but they require long-term planning and intervention as there is no quick and easy solution. They also require proper understanding of resources, trust in data, governance for coordination, multisectoral action, and local, regional, and international cooperation.

Emission control strategies are generally applied in sectors such as industry, energy, transport and urban planning. Their implementation often faces political and social challenges, especially as effective approaches need to include sectors that were not previously the focus of air quality management, such as the burning of solid household fuel for cooking and heating, waste management, livestock, manure management, fertilizer application. and open incineration of agricultural waste. They also include the lifestyle of the most privileged populations.

The use of ICT is an ancillary element in the air quality control process and at a minimum it is necessary to set up local pollutant and air quality monitoring networks. Air Quality Information Systems enable real-time data collection and then it is the task of governments, local governments, civil society and citizens who have real-time access to this data to find and implement the application of measures as appropriate for improving air quality.

The purpose of this paper is to identify the use of ICT in environmental performance assessment so that residents of urban centers are informed about air quality in the areas where they live, but also to serve as a basis for decision making. appropriate by local government and state institutions to influence the improvement of air quality within the allowed parameters.

2. Methodology

This study is based on the collection and analysis of primary and secondary data on the environmental, technological, economic and political aspects of air pollution. The data are collected from meteorological stations installed in the city of Tirana and are stored in real time in the database of the monitoring system.

The implemented system has the possibility, by comparing the values in real time with the allowed ones, to generate information which give a complete and real picture of the situation of the measured parameters in comparison with the limit values of pollutants approved by the Albanian government as well as the standards of also defined by EU guidelines.

Monitoring of environmental components is based on this network, according to stations, standard frequencies, defined parameters, sampling method, etc. Each monitoring station is connected to a set of parameters, which are measured and

analyzed, based on which, are the environmental indicators of the situation, impact and pressure.

The network of smart meters installed in the city of Tirana in the first phase of implementation in which it is located, consists of 4 measuring stations and in the future is expected to increase the number of measuring stations of the latest technology that measure all particles (PM_{2.5}, PM₁₀) and gases (Ozone-O₃, Sulfur Dioxide-SO₂, Carbon Monoxide-CO, Nitrogen Dioxide-NO) present in the air.

The limitation of this paper is the fact that it is based on data collected only from 4 smart meter stations as this is the number of metering stations designated to be implemented in the first phase, but in the second phase this number will go to 8 stations as 4 other important areas in the city of Tirana will be included where there is a large circulation of vehicles and people.

3. Discussion

The role and importance of ICT for different economic outcomes have been studied in recent years. The research has largely documented favorable economic outcomes of 759 increasing use of information communication technology (ICT) (Niebel, 2018; Majeed and Ayub, 2018). However, the ecological dimensions of ICT have received least attention in the literature. In effect, ICT has influenced human life in many perspectives including ecological aspects of life

The relationship between ICTs and the environment is complex. The impacts of ICT on the environment can be direct (*i.e.* the impacts of ICTs themselves, such as energy consumption and e-waste), indirect (*i.e.* the impacts of ICT applications, such as intelligent transport systems, buildings and smart grids), or third-order and rebound (*i.e.* the impacts enabled by the direct or indirect use of ICTs, such as greater use of more energy efficient transport). (Houghton, 2009).

Regarding the situation of air pollution and its monitoring, there is an assessment of the progress made, which is related to the monitoring coverage by automatic stations (24 hours of monitoring) of the six main cities of the country.

Pollutants that are measured are: SO₂, NO₂, (NO_x), CO, O₃, Benzene, PM₁₀ (PM_{2.5}) and heavy metals. Their monitoring is performed through automatic stations, including mobile, semi-automatic and passive tubes (the latter organized in several campaigns, one for each season).

The need for improvement in the air sector has been addressed in various European Commission reports including progress monitoring reports in the environmental sector.

Air pollution has led to a step increase in various illness and it continues to affect us on a daily basis. With so many small, mid and large-scale industries coming up, air

pollution has taken the toll on the health of the people and the environment. (Goswami, 2021)

In developing countries, the problem is more serious due to overpopulation and uncontrolled urbanization along with the development of industrialization. (Manucci & Franchini, 2017)

ICTs can be considered a solution for reducing pollution, especially where interacting with road freight transport to increase energy efficiency. Other innovative practices, such as e-ticketing, smart transport, and reservations can help companies in order to better identify the most efficient combinations of routes and networks for more sustainable freight transport system (Waygood et al., 2013; Russo and Comi, 2012; Sarkan et al., 2017; Rybicka et al., 2018; Tsakalidis et al., 2020; Jereb et al., 2021).

Legal framework for air quality management in Albania

Albania is a candidate country for membership in the European Union. In the process of accession negotiations, the Albanian governments have adapted the legislation in accordance with the legislation of the EU countries. Priority is met by EU requirements, including EU air quality limit values throughout Albania, and finally, monitoring of air pollution coming from various sources such as stationary sources (industrial plants, vehicles, waste management, combustion of fuels for domestic use, solid particles, etc.) and take measures to avoid the causes of exceeding the permitted limits for various pollutants thus preserving human health and the environment.

Air quality monitoring and management, in line with EU guidelines, is based on:

Law no. 162/2014, "On the Protection of Air Quality in the Environment" which aims to improve air quality in accordance with EU guidelines,

National Strategy for Ambient Air Quality (2014-2024), dated 10.09.2014, which aims to further improve air quality in Albania for a long period and reduce the risk of more serious health effects related to pollution and sets out measures to meet air quality objectives.

The National Plan for Air Quality Management (DCM no. 412, dated 19.6.2019) is a planning instrument for the implementation of Law no. 162/2014 "On the protection of Ambient Air Quality". This plan aims to reduce emissions from traffic, industrial and diffuse sources, thus aiming to improve air quality in areas where pollution exceeds norms, as well as maintaining air quality in the field.

The National Integrated Waste Management Strategy and Action Plan 2020-2035 aims to provide strategic guidance and set out a set of measures for integrated waste management reflecting the best practices of EU member states.

National Sectoral Solid Waste Management Plan approved by the National Council of the Territory with Decision no. 1, dated 13.01.2020. This document has defined a

phased investment plan (2019-2032) for local and regional integrated waste management infrastructure for the short, medium and long term, in relation to waste collection and transportation, waste reduction and recycling and equipment. treatment and / or disposal.

Sectoral Study on Investment Demand in Integrated Solid Waste Management in Albania (2018), "Sector Strategy" approved by Decision of the National Council of the Territory No. 1, Date 13.01.2020, defines the methodology and technology for investments future in the solid waste management sector, assess costs and ensure an objective, verifiable and transparent prioritization system of integrated waste management.

National Action Plan for the cessation and elimination of POPs (DCM 505, dated 29.08.2018), which also covers PCB / PCT, which assesses the condition of waste and sites contaminated with POPs. Action plans for the management of PCBs and the establishment of a system for the identification, marking, removal, storage and final disposal of equipment will provide a necessary description of the actions for the elimination of POPs and the identification of PCB / PCT equipment in Albania.

Based on the legislation in force, the indicators of air components have been defined, a geospatial information system for environmental monitoring has been set up and a network of monitoring stations for environmental indicators has been implemented.

The main objective of the Albanian Government is to provide all citizens with access to air without serious risks to their health. The setting of strategic environmental air quality objectives by the Albanian Government reflects the importance of public health and the environment. (https://konsultimipublik.gov.al/documents/RENJK_181_Dokumenti%20i%20Politikave%20Strategjike.docx, 2020)

Polluter	Concentration
Particle matter (PM 2.5)	25 µg/m ³ starting from year 2015 20 µg/m ³ starting from year 2020
PM 10	50 µg/m ³ 40 µg/m ³
Sulfur Dioxide (SO ₂)	350 µg/m ³ 125 µg/m ³
Nitrogen Dioxide (NO ₂)	200 µg/m ³ 40 µg/m ³
Lead (Pb)	0.5 µg/m ³
Carbon monoxide	10 mg/m ³
Benzene	5 µg/m ³

Table 1: Limit values for environmental indicators

The monitoring of the state of the environment in Albania is done in accordance with the national legal framework, which determines the responsible institutions involved in the performance and execution of this process. These legal documents also define the environmental indicators / components and institutions in charge of their monitoring, based each year on the National Environmental Monitoring Program (NPMP), which analytically includes all elements. necessary, necessary, to carry out this activity: list of environmental indicators to be monitored separately by topic, methodologies to be used for monitoring each indicator and parameter, respective monitoring costs, institutions charged, ways evaluation and data management, accompanied by these and in accordance with the National Monitoring Network, for each major environmental component (air, soil, water, biodiversity, forests and in recent years noise). The requirements and standards, on which the BMP is drafted, are in line with those set by the EU Directives on the respective areas and components: air, water, land, forests and biodiversity.

One of the most important elements of the monitoring infrastructure in Albania is the National Monitoring Network, which is designed in accordance with the requirements of environmental legislation implemented today in Europe. The National Monitoring Network for the components: air, water, land and bio-diversity, is composed of a certain number of monitoring stations distributed according to the respective fields reflected in the following map.

At the same time, the Integrated Environmental Information System (SIIM) is in use. It is a system that provides reliable data on the environment at the right time and quality. Its mission is also related to the storage, management, verification, protection, use and archiving of environmental data. The data are collected in a database and processed in the GIS program. The objective of this system is to ensure a high quality of data and access to it at any time, by different users. At the same time, its establishment enables the exchange of environmental data and information, which is provided by all monitoring institutions in the country, which completes the infrastructure for the collection and management of environmental information and data at the national level.

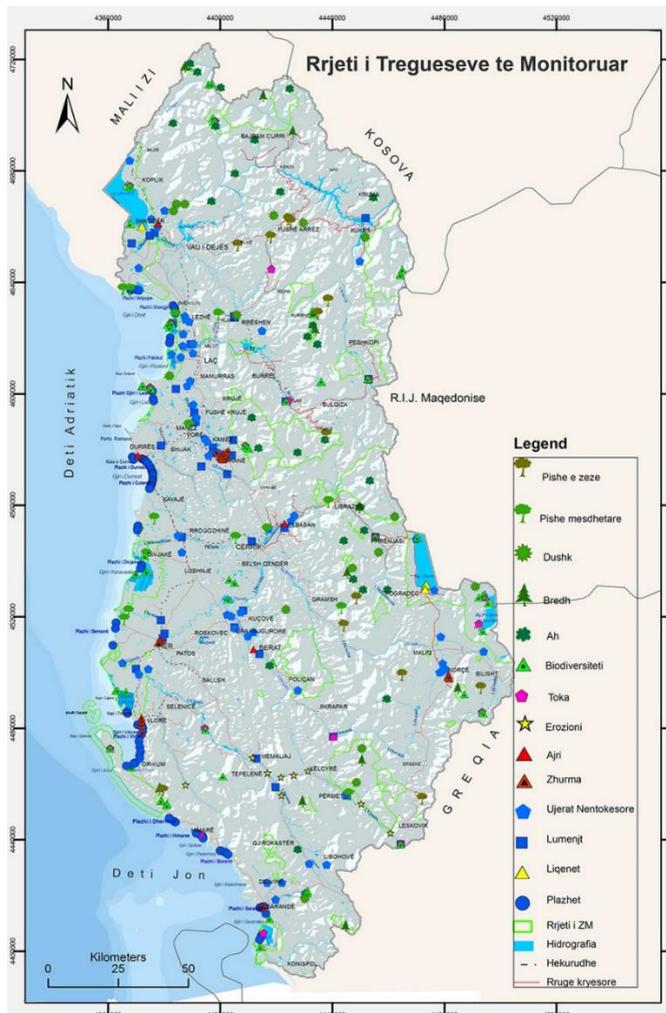


Figure 1: Map of Environmental Monitoring Stations in Albania

Air quality monitoring in the city of Tirana

Tirana is the main center, the metropolis where the most important roads pass. Favorable position, connection with the city of Durrës through the “Tirana-Durrës” highway, connection with Elbasan through the “Tirana-Elbasan” highway, connection with the north-eastern part of Albania through “Arbri Road” and connection with the north-western part through the “Tirana-Shkodër” highway, have make it a key point of development.

In the region of Tirana, most of the Albanian businesses operate and there is a continuous increase of the population as a result of the rapid urbanization that is happening. In this situation, an important problem that needs to be monitored is that of air quality, as one of the challenges faced by local government, central government, interest groups, residents, etc.

Understanding the opportunities offered by the use of information technology, the Municipality of Tirana has relied on various and modern technologies in order to manage the environment effectively and efficiently and improve the quality of life of city residents.

The citizens of Tirana have the opportunity to monitor in real time, from the application "My Tirana", the air quality in the capital through the use of smart meters, marking an important step towards the realization of Tirana Smart City to adapt to the demands of urban growth. (www.tirana.al, 2021)

Thanks to these new intelligent meters of the latest technology, which have been installed in the city, accurate data on air quality are obtained, which are then displayed in the application "My Tirana", an application which measures air pollution in Tirana in time real, so that every citizen, just as he has access to the city cameras, reports, traffic, has access to this information and make decision-making easier for the truth that everyone knows.

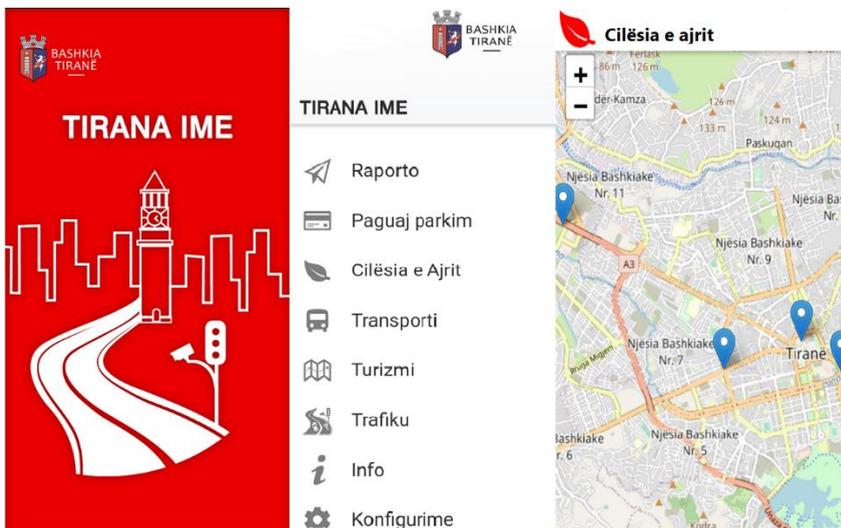


Figure 2: Application for air quality measurement in the city of Tirana

At a time when the city of Tirana is undergoing a comprehensive and rapid transformation from a chaotic post-communist transition to a long-term sustainable city, which expects a third of Albania's population, providing an efficient infrastructure to serve the needs of citizens not only is it important, but it becomes even more challenging. Relying on technology to deliver public services can be considered perhaps one of the greatest advantages to be used for local governments nowadays.

The application "My Tirana" has been created as a platform that meets some of the main concerns of the inhabitants of the capital. This has significantly increased the accountability of local government to citizens and has also served to raise citizens' awareness of the key role they play in the ongoing functioning of good governance.

The application is valid not only for all residents of Tirana, but also for anyone who visits the city and wants to use the application including local government, private companies, community, civil society, etc.

"Tirana Ime" is a web-based platform that serves to enable the exchange of information for interested users and offers a unique platform easily accessible to all citizens, local government, government or various interest groups with the aim of facilitating and improving the daily lives of those who live and work in the most populous city of Albania.

The "Air Quality" functionality has become effective since 2019 and is also enabled through the mobile phone service.

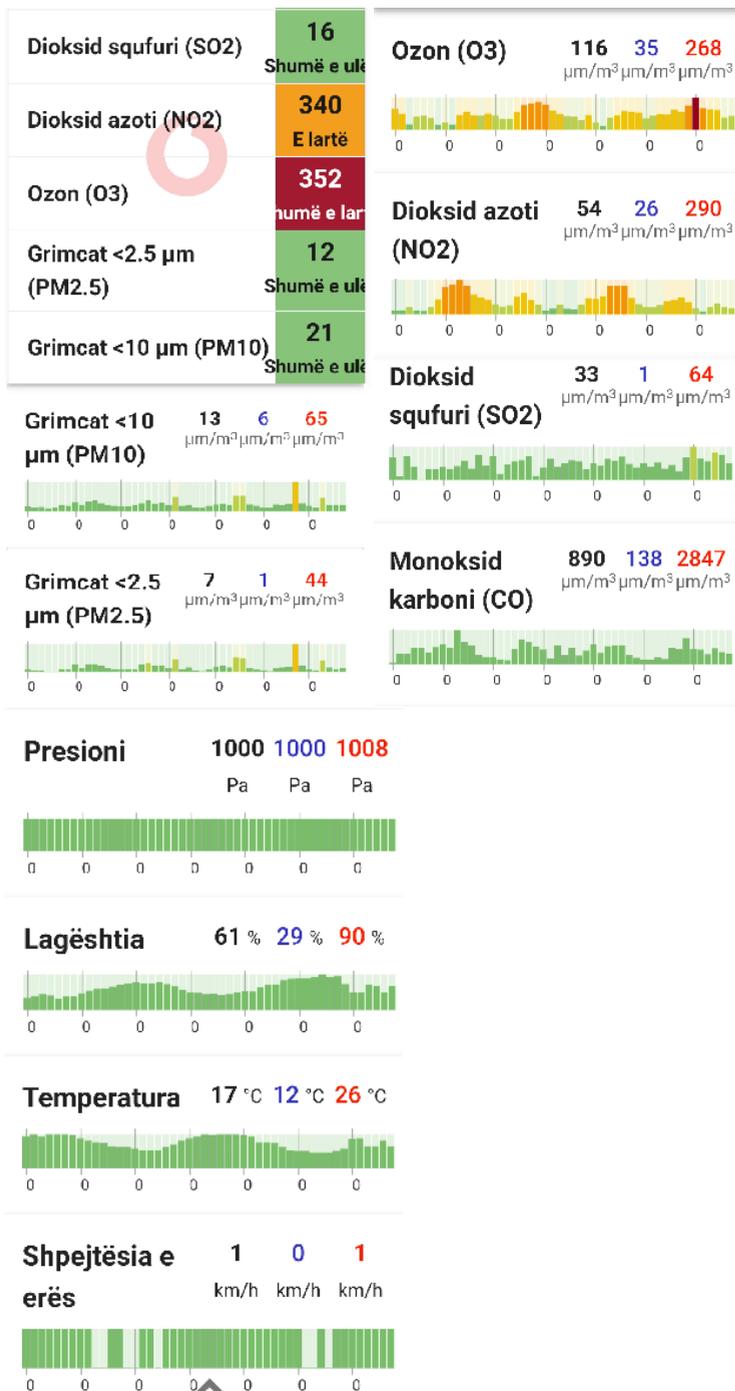


Figure 3: Values of measurements of air quality indicators through the application "My Tirana"

One of the most important objectives is to enable the right of citizens to be accurately informed about the status of ambient air quality in the place where they live and work, in a way that is understandable to all.

Based on the data available from the air quality monitoring system and considering the quality problems associated with this data, we have made an assessment of one of the major pollutants (NO₂), taking into account the threat it poses to human health.

Nitrogen Dioxide (NO₂) concentrations are higher than the European limit value of 40 µg / m³ as a monthly and annual average. Monitoring stations in 4 hot spots of the city of Tirana show values that are several times higher.



Figure 4: Block diagram of the Air Quality Monitoring System in the city of Tirana

The data collected from the 4 metering stations of air indicators, after being stored in the central database, are available not only to the residents of the city of Tirana but also to the responsible state institutions and local government who depending on the data situation collected undertake their respective actions to influence the improvement of air quality. Thus, we can point out that based on the data collected from this web-based system, the local government has drafted strategies for greening areas where higher levels have been found than those allowed for indicators that determine air quality.

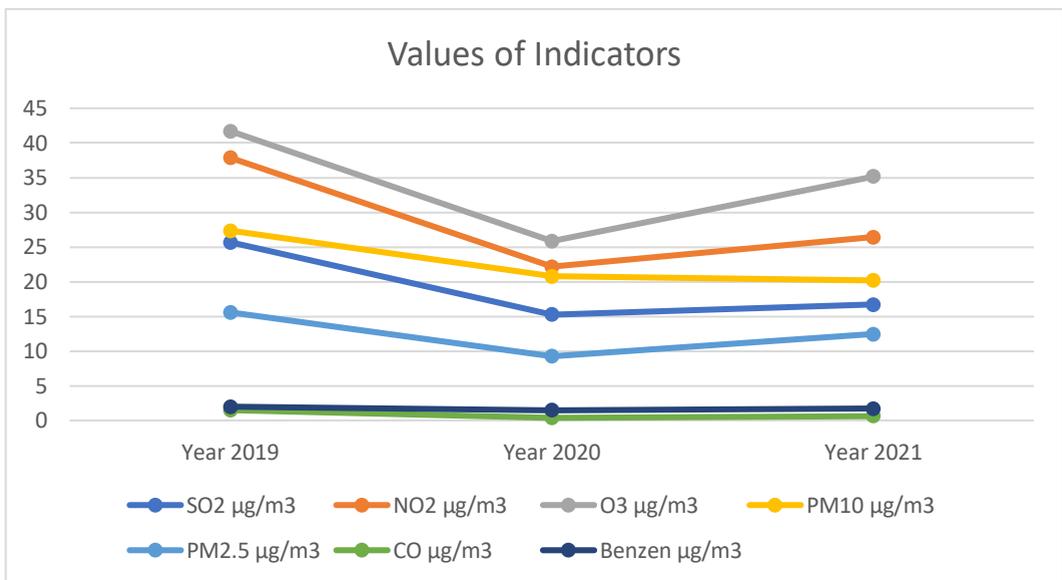
At the same time, based on the data collected by the system, the local government in cooperation with the Traffic Police have organized the distribution of traffic in order to improve the air indicators on those roads or areas where the indicators are above the maximum allowed values. Another initiative in order to improve air quality indicators is the organization of car-free days.

Based on the data collected from monitoring stations in the city of Tirana for the period from 2019 to the end of 2021, it results in a variable curve of measured indicators.

The measured indicators also reflect the situation of air quality during the quarantine period as a result of the COVID-19 pandemic where vehicle traffic was limited. During 2020 there is a significant improvement of indicators that determine air quality.

With the lifting of the austerity measures taken during 2021, there is an increase in the values of indicators that determine air quality as the circulation of population vehicles, urban transport, business transport, etc. increased.

From the comparison of air quality indicators (CO, NO₂, O₃, PM 10, PM 2.5 and SO₂), before quarantine and after it, it resulted that all air quality indicators were declining.



4. Conclusions

Air indicator monitoring systems are a very important element for air quality management and are used for a variety of purposes in air quality management. Air quality management includes a cycle of setting standards and objectives, designing and implementing control strategies, evaluating the results of these control strategies, and measuring progress.

The theoretical contribution of this paper is based on the analysis of the system of measurement of air quality indicators shows the positive role played by the use of ICT in this aspect as well as in other areas of social and economic life. The analysis is based on data obtained in real time from 4 hot spots in the city of Tirana. The information

obtained from data processing can be used for decision-making in order to improve air quality and consequently increase the quality of life in urban areas.

The air quality monitoring system implemented by the Municipality of Tirana for measuring air quality indicators in the main points of the city enables the provision of real-time data and serves both the government, local government, civil society, citizens and all stakeholders in building strategies to improve air quality and consequently in improving the quality of life of residents such as increasing green areas, increasing the number of trees, reorienting traffic in order to reduce the negative effects of emissions of CO, NO₂, SO₂ gases or solid particles.

The importance of this real-time and web-based monitoring system may be greater after the implementation of the second phase in which air quality monitoring stations will be installed in the most important points of the city of Tirana.

This study does not make a detailed analysis of the individual impact of each of the variables (increase of green areas, increase in the number of trees, better management of vehicle traffic, etc.) in improving air quality but simply evidence that based in the reality of the city of Tirana, the appropriate management of these variables based on historical data collected by the air quality monitoring system has led to the improvement of indicators that determine air quality.

At the same time, it is necessary for the responsible state institutions in the field, local government or interest groups to develop appropriate strategies for improving air quality. All areas where air quality indicators are out of bounds should be identified in order to take appropriate action to meet air quality objectives.

Although a modern legal framework has been built in Albania, it is necessary to have a consistent approach to addressing air quality issues at the local government level and at the same time to be linked to initiatives in other sectors (e.g. Transport plans, Climate Change plans, Energy Efficiency programs, etc.).

Given that the main source of pollutants for the Municipality of Tirana is road traffic it is necessary to consider in future plans of local government to improve air quality.

This paper can be used for other studies which are related to the use of ICT for the management of vehicle traffic in cities to avoid traffic jams, finding the nearest parking lots, reducing vehicle traffic time and consequently the reduction of one of the main sources of air pollution which is the vehicle traffic.

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Preventive and Interceptive Orthodontics Treatment

Rozela Xhemnica

Ph.D., University of Medicine of Tirana, Faculty of Dental Medicine

Milton Rroço

Msc.MD , University of Medicine of Tirana, Faculty of Dental Medicine

Abstract

Preventive orthodontics is that part of orthodontic practice which is concerned with patients and parents education, supervision of the growth and development of the dentition and cranio-facial structures. The diagnostic procedures undertaken to predict the appearance of malocclusion and the treatment procedures instituted to prevent the onset of malocclusion. Interceptive orthodontics has been defined as that phase of science that can recognize and eliminate potential irregularities and malpositions of the developing dento-facial complex. Many of procedures are common in preventive and interceptive orthodontics, but the timings are different. Preventive procedures are undertaken in anticipation of development of a problem, whereas interceptive procedures are taken when the problem has already manifested. Orthodontic problems in children can be divided conveniently into non skeletal and skeletal problems, which are treated by tooth movement and by growth modification. Such treatment may take place in deciduous or transitional dentition and may include redirection of ectopically erupting teeth, slicing or extraction of deciduous teeth, correction of isolated dental crossbites of recovery of minor space loss.

Keywords: Preventive orthodontics, dentition, malocclusion, malpositions, deciduous teeth.

Introduction

Many of the procedures are common in preventive and interceptive orthodontics but the timings are different. Preventive procedures are undertaken in anticipation of development of a problem. Whereas interceptive procedures are taken when the problem has already manifested. Purpose of early orthodontic treatment: To intercept developing problem. To prevent obvious problems from becoming worse. To correct obvious problems. To remove the etiologic factors and restore normal growth.

To reduce the severity of skeletal problems, making possible easier and more precise tooth positioning in adolescence.

Purpose of early orthodontic treatment. To intercept developing problem. To prevent obvious problems from becoming worse. To correct obvious problems. To remove the etiologic factors and restore normal growth. To reduce the severity of skeletal problems, making possible easier and more precise tooth positioning in adolescence.

2. Methodology

Preventive orthodontics include treatment of : Natal teeth, Occlusal relationship, Eruption Problems, Space maintenance. Natal teeth: Present at birth or erupt shortly after birth. Most frequent in lower incisor region. Only 10% are supernumerary therefore removed only when interfere with feeding or causing tongue ulceration.

Cross bites of Dental Origin: Correction of dental crossbites in the mixed dentition is recommended, because it eliminates functional shifts. The most common etiologic factor for non skeletal anterior Crossbites is lack of space for the permanent incisors. It is important to focus the treatment plan on management of the total space situation, no just the crossbite. If the developing crossbite that is discovered before eruption is complete and overbite has not been established the adjacent primary teeth can be extracted to provide the necessary space.

Prevention and timely restoration of carious teeth. The deciduous teeth are natural space maintainers. Simple preventive procedures like: Application of topical fluorides & fissure sealants.

Management of ankylosed tooth: Ankylosis is a condition characterized by absence of the periodontal ligament in small area or whole of the root surface.

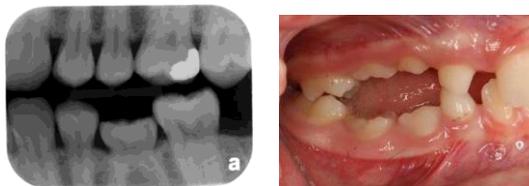


Fig 1 Ankylosis of teeth **Fig 2**

This radiograph demonstrates both anterior and posterior teeth tipping over adjacent ankylosed primary molars. The ankylosed teeth should be removed if significant tipping and space loss are occurring.



Fig 3

Supernumerary & supplemental teeth can interfere with eruption of nearby normal teeth. They deflect adjacent teeth and erupted teeth in abnormal positions. They should be identified and extracted before they cause displacement of other teeth.



Fig 4 Supernumerary teeth Supplemental teeth

Space maintenance: Premature loss of deciduous teeth can cause drifting of the adjacent teeth into the space. Space maintainers must be inserted in appropriate cases after the loss of deciduous teeth. Space maintainer appliance is different intra oral removal of fixed appliance.



Fig 5 Space maintenance

Over-Retained Primary Teeth: A permanent tooth should replace its primary predecessor when approximately three fourths of the root of the permanent tooth has formed. Once the primary tooth is out, if space is adequate, moderately abnormal facial or lingual positioning will usually be corrected by the equilibrium forces of the lip, cheeks and tongue. A primary tooth that is retained beyond this point should be removed because it leads to: Gingival inflammation, Hyperplasia that causes pain and bleeding .



Fig 5 Over-Retained Primary Teeth

Ugly duckling stage: The spaces between the incisors, including the midline diastema, decrease and often completely disappear when the canines erupt. While their crowns diverge distally, this condition of flared and spaced incisors is called the "ugly duckling" stage of development. These spaces tend to close spontaneously, when the canines erupt and the incisor root and crown positions change.



Fig 6 Ugly duckling stage

Procedures undertaken in interceptive orthodontics: Serial extraction, Correction of developing crossbite, Control of abnormal habits, Space regaining, Muscle exercises, Interception of skeletal malrelation, Removal of soft tissue or bony barrier to enable eruption of teeth.

Serial extraction: Planned and timely removal of certain deciduous teeth followed by certain permanent ones, to allow normal alignment of permanent teeth.

Advantages of serial extraction: Reduces the severity of malocclusion, Reduces the extent of mechanotherapy, Reduces the duration of treatment.

Disadvantages of serial extraction: Chances of increasing overbite, Canines may fail to migrate distally, anterior teeth may tip lingually.

Correction of developing crossbite. Anterior cross bite is a condition characterized by reverse overjet, where in one or more maxillary anterior teeth are in lingual relation to the mandibular teeth.



Fig7 Dento-alveolar

Skeletal

Functional

The crossbite should be intercepted and treated at an early stage to prevent a minor orthodontic problem from progressing into a major dento-facial anomaly. The best time to treat a crossbite is the first time it is seen" Or else it may grow into skeletal malocclusion" Correction of developing crossbite.

Methods of correction of developing anterior crossbite:



Fig 8 Tongue blade

Disavantages :It is effective only during phase that clinical crown has not erupted totally in oral cavity. It is used only when we have adequate space for correction. Indications: It is used only in cases when crossbite is due to palatal movement of maxillary incisive. It is putted in an angle of 45 degree in lower anterior and is made of acrylic or metal.



Fig9

Control of abnormal Oral habits. Habit's refers to certain actions involving the teeth and other oral or perioral structures, which are repeated often enough by some

patients to have a profound effect on the positions of teeth and occlusion. Oral habits should be recognized early and patient should be helped to give up by motivation or by fitting a suitable habit breaking appliance.

Some common habits: Thumb / digit sucking, Tongue thrusting, Mouth breathing, Lip sucking / biting.

Functional appliance are used. These appliances are equipped with accessories that train tongue to the new position. Correct the position of teeth (close anterior open bite) .

Mouth breathing as habitual respiration through the mouth instead of the nose.

Usually seen in people with nasal obstruction may also occur as a habit. If persists, Vestibular Screen / Oral Screen can be used.

Lip bumper. It is positioned in the vestibule of the mandibular arch & serve to prohibit the lip from exerting excessive force on the mandibular incisors.

The myobrace interceptive appliance system is designed specifically to correct poor oral habits. It is more effective before a child permanent teeth are coming through ages 5 to 8.



Fig10 Lip bumper



Myobrace interceptive appliance

Space regainers in the form of removable appliances or fixed appliances are used to regain the space by moving the drifted teeth back to their original position. Premature loss of deciduous teeth causes migration of the adjacent teeth into the edentulous space. This cause inadequate space for the eruption of the permanent teeth.

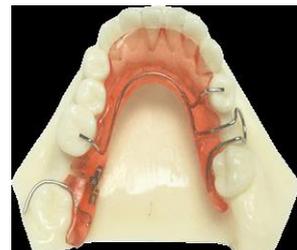


Fig 11

Space regainers

3. Conclusion

The mal occlusion may be accepted or be treated in a variety of ways. The natural growth change which follows the completion of the treatment may spoil fine results. Interceptive procedures can to some extent prevent or reduce the severity of malocclusion. In the treatment at early ages the orthodontist can reasonably become “Re director” of growth pattern rather than solely concerned about tooth position.

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A literature review on school leadership and the impact of the leader manager in improving Albanian school effectiveness

Edi Puka

Department of Psychology, Education and Sports, European University of Tirana,
Tirana, Albania

Abstract

The aim of this study is to review the literature on school leadership and to evaluate through analysis the implementation of a new position of school principal in Albania, the principal as a school manager. The function of the principal as a manager is not only closely related to the school administration in financial terms but also to curriculum planning, organization, monitoring the progress of teachers and students, managing human resources, solving problems in school, etc. Through literature review, this study will analyse leadership styles that affect the effective management of the school and the role of school principal as a manager in increasing school productivity. The findings from this literature review indicate that management and leadership are essential in successful school development. Nowadays, Albanian schools need to be led by good managers who must be good leaders and who must have managerial skills to be efficient.

Keywords: Style of leadership, School leader, Leader-manager, Albanian principals', Effective school management.

Introduction

The Education and Training (ET 2020) program of the European Commission, adopted on 12 May 2009, aimed to improve further cooperation in education and training in the EU by raising the quality of continuing professional development of teachers and school leaders. Furthermore, the *Council conclusions on the professional development of teachers and school leaders*, adopted in 2009, recommended that Member States make participation in mobility programs available for school leaders to improve their knowledge, skills, and competences, as well as lighten their administrative workload. The council conclusions indicate that school leaders have great impact on the quality of teaching and on the overall learning environment, including staff motivation, morale and performance, teaching practices, and the attitudes and aspirations of pupils and parents alike. (Trade Union Committee for Education – Brussels 2012)

Management and leadership are important for the delivery of good health services. Although the two are similar in some respects, they may involve different types of outlooks, skills, and behaviors. Good managers should strive to be good leaders and good leaders, need management skills to be effective.

For this reason, in October 2018, in Albania, with the support of the Albanian-American Development Foundation (AADF) was established the Centre for School Leadership to support the professional development of Public and Private Pre-University Education Institutions leaders. On the other hand, with the initiative of the Albanian Government, on the decentralization of the pre-university education system in the framework of the regional development reform, pursuant to Law no. 139/2015 "On local self-government", as amended, it was determined that municipalities are also responsible for the construction, rehabilitation and maintenance of educational buildings of the pre-university school system (Education Strategy 2021-2026), the need arises in studying the profile of the school leader as a manager. Consequently, this paper will focus on the literature review of the importance of school leadership style in enhancing school quality and the leadership role between leader and manager.

Leadership styles and their impact on school management

In the study conducted by OECD "*Creating Effective Teaching and Learning Environments*" First Results from TALIS For each indicator, the teacher model is estimated for each country to examine the relation with principals' management styles, controlling for a number of professional and personal characteristics of teachers: gender, level of experience as a teacher, educational training, permanency of their teaching position, how many schools they teach in, and size of the community of the school. (OECD, 2009). At the same time, Robinson, V., Rowe, K., & Lloyd, C. identified a set of roles that contribute the most to improving the results of a school. The effect sizes are listed from highest to lowest: promote and participate in the training and development of teachers; work in the planning, coordination and evaluation of teachers and the curriculum; set objectives and expectations; manage strategic resources and ensure an orderly environment conducive to learning (Robinson, V., Rowe, K., & Lloyd, C., 2009).

There are two famous types of leaderships, namely transactional and transformational leadership. Robbins and Coulter defined Transactional Leadership Style as a style of leadership in which a leader leads primarily by using social exchanges or transactions. The Transformational Leadership style involves stimulating, inspiring, and transforming organizational members or employees to achieve extraordinary outcomes. Transformative school leadership connects leaders to teachers within continual improvement processes so that combined efforts result in a collective efficacy and a positive school trajectory, with teachers motivated to

look past their individual interests and invest in the success of the school as a whole (Leithwood, 2012).

Robbins and Coulter defined, also, Laissez-Faire Leadership Style as style of leadership whereby a leader gives followers complete freedom to make decisions and carry out tasks in whatever way they saw fit (Robbins & Coulter, 2007).

Organizational Performance on the other hand, may be defined as the accumulated end results of all the work activities of an organization (Robbins & Coulter, 2007). Baum and Blackwell defined organizational performance as the actual output or results of an organization as measured against its intended outputs or goals and objectives (Baum & Blackwell, 2002)

To further summarize their behavior, two management styles – instructional leadership and administrative leadership. Principals scoring high for the first management style are significantly involved in what is referred to in the research literature on school management as an instructional leadership style. This index was derived by averaging the indices for the first three management behaviors, management for school goals, instructional management, and direct supervision of instruction in the school (OECD, 2009). A variety of quantitative research reviews have affirmed positive, though mediated, relationships between principal's instructional leadership and student learning and other school outcomes (Louis et al., 2010; Scheerens, 2012; Liebowitz & Porter, 2019)

As Drodge and Murphy notice, management is considered as a rational social activity, when a formal leader concentrates his effort to achieve organizational goals. (Drodge & Murphy, 2002). A manager acts according to determined responsibility and procedures and does not actually create something new in contrary to leader, who forms assignments and seeks for innovation (Diska, 2009, p. 16). Moreover, the current research show that boundaries between government, management and leadership blurred (Belak & Duh, 2012). Pont, Nusche and Moorman also considers that effective instructional leadership in schools requires some degree of administrative autonomy in decision making about key components of inputs to the instructional process. (Pont, Nusche & Moorman, 2008).

School leadership and its effectiveness in increasing school quality

Leadership effectiveness in the eyes of followers is closely tied to the leader being driven, able to inspire, and prioritize needs, which in turn produces a sense of safety and calm for followers (McDermott, Kidney & Flood, 2011)

Hall, Mackay & Morgan claim that the leader is a symbol of the school for both the people within it and the community, as he is at the top of the school structure (*Hall, Mackay & Morgan, 1986*).

Effective school leaders nowadays are supposed to have “a set of competencies manifested by behavior that relates to effective or outstanding performance in a specific job or role” (Hitt, Meyers, Woodruff, & Zhu, 2019).

Hallinger concluded that based on empirical data, it is quite evident that school leadership is needed for the successful execution of programmes and policies directed at ensuring that schools achieve their desired results. (Hallinger, 2018). Moreover, the principal leadership has an undisputed effect on the characteristics of the school which ultimately positively impact the quality of school effectiveness. (Leithwood et al., 2019). While Allen focuses on the person's ability to achieve everything with high performance (Allen, 2001).

According to OECD school autonomy alone does not automatically lead to improved leadership.

On one hand, in increasingly autonomous schools, it is important that the core responsibilities of school leaders are clearly defined and delimited. School leaders should have an explicit mandate to focus on those domains that are most conducive to improved school and student outcomes. Otherwise, school autonomy may lead to role overload, by making the job more time-consuming, increasing administrative and managerial workloads, and deflecting time and attention away from instructional leadership. On the other hand, effective school autonomy requires support. School principals need time and capacity to engage in the core practices of leadership that contribute to improved teaching and learning. It is therefore important that the devolution of responsibilities comes with provisions for new models of more distributed leadership, new types of training and development for school leadership and appropriate support and incentives (OECD, 2008)

According to Bush and Jackson, the effectiveness of school principal training in educational systems in the developing countries is even less well understood than their effectiveness in the developed world (Bush & Jackson, 2002)

Does the appointment of the principal as a manager affect in increasing school productivity?

The leaders focus on the long term, the horizon, take risks, want to do the right things and thus appeal to both emotion and reason, rely on trust, inspire, innovate, urging people to a new vision and uses personal influence (Landsberg, 2009).

Sergiovanni describes the leading as something personal consisting of heart, head, and hand. He emphasizes that the "heart" of leadership has to do with beliefs, values, and vision. The "head" of management is about the experience accumulated over time and the ability to perceive the current situation in the light of these experiences. (Sergiovanni 2007).

Schermerhorn, Hunt, and Osborn define leadership as interpersonal influence over individuals, or groups of people and make them do what a leader expect to happen

(Schermerhorn, Hunt & Osborn 2000). For this reason, the manager's focus is on what he expects from people even though the results of individuals are not encouraging. While Maxwell states the opposite. According to him, the leader's attention is focused on what teachers can do, and not on what he can get from them. Thus, he builds a good promotional relationship and increases school productivity. (Maxwell, 2013).

Dublin, on the other hand, defines leadership as the ability to inspire trust and support in individuals who strive to achieve organizational goals. It is about change, inspiration, and motivation. (Dubrin, 1998).

School effectiveness is directly related to the principal's ability to select the right job, select the guaranteed and applicable curriculum, set challenging goals, involve parents and the community, safe and orderly environment, collegiality, and professionalism. (Marzano, Waters & McNulty, 2005)

Anderson, Ford, and Hamilton propose that the combination of management and leadership is necessary to transform an organization and people in it. They believe that management cannot function effectively if it does not have direction at its core. Both management and leadership need to be developed and integrated together because of the constant changes that the world is experiencing in all human aspects and the manager must have the ability to respond appropriately to society changes and demands. (Anderson, Ford & Hamilton, 1998).

The study conducted in 2019 by Albanian-American Development Foundation "Nationwide needs assessment and educational leadership and management capacities of Pre-university Education Institutions in Albania" identified that most of the Albanian principals of pre-university education institutions interviewed in this small sample were below the expected target regarding the leadership practices. School principals with a master's degree in educational management (even in cases with limited experience), tend to score more highly for the 'Self Evaluation and Improvement' dimension of leadership. They also exhibit more features of the 'Strategic Orientation' dimension of leadership. Other school principals, even though they had more experience as principals, or a master's degree in other field of studies, seem to face difficulties in undertaking work that was aimed at bringing about improvement and creating the institution's development plan.

If at the centre of educational policies will be the increase of school principal professionalism, we will have a greater effect on the qualitative improvement of school performance.

Conclusions

Bennis and Nanus claim that "managers are people who act in a fair way, while leaders are people who do the right thing" (Bennis & Nanus, 1985).

School leadership has been and continues to be the subject of much discussion and research. School leadership is one of the key determinants associated with the success and failure of a school. Through leadership style people are guided and motivated by a leader to achieve school objectives. The international trend nowadays is the transforming role of school principals, from organizational managers into leaders of learning (Halinger & Ko, 2015). At the same time, is much research on school leadership, that can help principals to ensure that they have effective schools.

Currently, principals in Albanian tend to take an instructional leadership style of management (AADF, 2019). The school principal is an important factor for its success (Fullan, 2005) and as a result Albanian schools need exactly a leader manager to take care not only of the results but also of teachers and students' motivation to increase school efficiency, guaranteeing its success.

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Inheritance and the Role of Notaries in Inheritance Procedure in the Republic of North Macedonia

Xhemile Saliu

International Balkan University, Faculty of Law, North Macedonia

Fjolla Kaprolli Ismaili

International Balkan University, Faculty of Law, North Macedonia

Abstract

In the Republic of Northern Macedonia, the right to property and inheritance are guaranteed by the state constitution and the law of inheritance. According to the Macedonian legislature, all citizens, regardless of their differences in terms of religion, race, nationality and gender under the same conditions are equal in inheritance. In the Republic of Northern Macedonia, the inheritance of the deceased is inherited primarily by his children and spouse. They inherit equal parts. In terms of inheritance, the extramarital partner equals the marital spouse, and the extramarital union created by full adoption by blood relation. When there are children of the testator that do not originate from the marriage with the surviving spouse and the property of this spouse is more than the share that would belong to him in the division of the will in equal parts, then each child of the testator has twice as much part of the inheritance than the spouse. In terms of court proceedings, in the Republic of Northern Macedonia the procedure is conducted before civil courts. The court sets up the proceedings on the basis of official duty when it receives data on the death of a certain person (death certificate). The competent court entrusts this procedure to the Notary, within eight days from the day of the beginning of the procedure. Notaries further have the authority to take action and make decisions in the inheritance procedure. When it comes to the notary as an institution, it is very old, which is proven in various documents from the time of Egyptian and Roman law. With the process of democratization of the legal systems of many countries in the world, and also with the democratization of the legal system in the Republic of North Macedonia, in 1996 notary was introduced as an independent public service, which performs public works for private interest. The significance of this paper relies on the importance of the institute of inheritance and the inheritance procedure as one of the oldest institutes of civil law, i.e. one of the largest non-litigation procedures, but also of the great social significance it has for each individual. In the Republic of North Macedonia, this procedure is regulated by the Law on non-contentious procedure. This paper will try to focus on the work and the entrusted powers of the notary public in the inheritance procedure, as well as why

the notary public was entrusted with the conduct of the inheritance procedure. All this is intended to be achieved through theoretical analysis and by analyzing cases before and after it was given to the notaries the authorization for conducting the inheritance procedure in our country. This paper in addition to having theoretical significance, will also have a number of practical aspects. Efforts will be made to show the practical importance of this paper, especially the reasons that contributed to the appearance of this novelty, i.e. the participation of the notary public in this procedure. First of all, with this unloading of the court from the inheritance procedures, the increase of the trust of the citizens, as participants in the inheritance procedure, has been achieved. Apart from this aspect, it also enables the acceleration of the resolution of cases and the increase of the efficiency of our legal system, because the cases will not remain closed in the drawers of judges for years, especially those cases that do not deserve to remain unresolved because they have nothing disputable. Through research methods will be identified difficulties in terms of legislation in the relevant field and the implementation of these legal norms in the application of regulation in this field.

Keywords: *Inheritance in Republic of North Macedonia, Inheritance court proceedings, Notaries as trustees of the court.*

METHODOLOGY

In this paper are used ***theoretical methods*** to achieve the goals outlined in this paper. With their help, the domestic regulations will be analyzed, which regulates the inheritance procedure.

In the paper are used ***the normative method***, as one of the most important methods, especially when it comes to analyzing court proceedings, i.e. the procedure initiated by notaries as trustees of the court, and especially when it is used to analyze our and foreign positive regulations.

An inevitable method, when it comes to research, is the ***historical method***, which also has an important place in this paper, especially when it comes to analyzing and studying the inheritance procedure in the Republic of North Macedonia from ancient times until today, with the help of which are concluded what factors contributed to the introduction of a novelty such as the transfer of jurisdiction from national courts to the notaries as trustees of the court to decide in inheritance procedure.

Finally, ***deduction and induction are two methods that are use***, which helped to reach out appropriate conclusions. Deduction method is used in order to reach accurate conclusions through analysis and study. So, through such a method from general findings are reached to concrete findings. In addition to the induction method, its analogue method, the induction method, also is used. With induction method the general conclusions are drawn from concrete findings.

INHERITANCE LAW AND COMPULSORY PORTION IN THE TERRITORY OF REPUBLIC OF NORTH MACEDONIA AND THE CHANGES THAT SHOULD BE MADE

Considering the fact that the Republic of Northern Macedonia and its territories in the past have been under the legislative power of the Former Yugoslavia, to analyze the inheritance in general as well as the compulsory portion of the inheritance in particular we must go back in time because it is the Yugoslav legislature that has taken deep roots, which is still felt today in the Macedonian legislature. Thus, in the territory of the Republic of Northern Macedonia, after the Second World War in the field of inheritance, the first Federal Law on Inheritance of 1955 was applied, the rules of which were the basis for the adoption of later laws in the field of inheritance¹ (Federal Inheritance Law 1955; RFNJ). Thus from that time the legal inheritance in the strict sense of the word which includes the regular legal as well as the imperative inheritance (the necessary part of the inheritance) if analyzed in historical terms, we can see that it has undergone changes, namely this institute has been dynamic and in comparative connotation has been different from one state to another, as regards testamentary inheritance from this year (1955) to the present there has not been as much dynamism and variability compared to the legal inheritance, with a few exceptions which we will mention in the following sentences² (Markovic, 1972, pp.30-70, 100-150, 270, 287-410).

And then, with the enactment of the 1971 Constitutional Amendments, normative jurisdiction over substantive issues of inheritance law passed from Federal competences to the competence of republics and provinces³ (Official Gazette of SFRY", no. 42/65 and 47/65). It turns out, then, that the Inheritance Law enacted in 1973 was based largely on inheritance rules from the 1955 federal law of Yugoslavia⁴ (Official Gazette of SRM, p.998, 1973). The Law on Inheritance of 1973 was adopted and implemented until the independence of the Republic of Northern Macedonia. Thus, after the independence of the Republic of Northern Macedonia and after the

¹ Federal Inheritance Law 1955; RFNJ (ФНРЈ Службен.весник 20/1955); 20/1955.

² Slavko Markovic - Inheritance Law - Faculty of Law - Nis - pp.30-70; 100-150; -270; 287-410, 1972.

³ See: Decision on promulgation of the Constitutional Amendments (Official Gazette of the Socialist Federal Republic of Yugoslavia, Belgrade, No. 29, July 8, 1971, - Article 15 On the day this Law enters into force, the following federal laws shall cease to apply: 26) of the Law on Inheritance ("Official Gazette of SFRY", no. 42/65 and 47/65), except for the provisions of Articles 186 to 190 and the provisions relating to the procedure in inheritance matters.

⁴ Decree on the Promulgation of the Law on Inheritance (The Law on Inheritance was promulgated and approved by the Assembly of the Socialist Republic of North Macedonia at the session of the Assembly of the Republic, held on 25 September 1973, and at the session of the Municipal Assembly, held on 25 September 1973, No. - 03-2316, Skopje - Official Gazette of SRM, p.998, 1973.

adoption of the constitution in 1991¹ (Constitution of Republic of North Macedonia, article 443) , five years later, the 1996 inheritance law was passed² (Law of Inheritance of North Macedonia)

Even in this law, most of the rules of legal-inheritance nature are incorporated based on the inheritance law of 1973 and the federal law of 1955. One of the rules of a legal-hereditary nature that has been incorporated and borrowed from these previous laws is the aspect of the circle of blood heirs or those of marriage. However, in recent decades there have been major changes in marital and family relationships that inevitably affect inheritance as well, due to the close link that exists between the family and the law of inheritance³ (Kok, 2015, page 479-514; 2015 & Barlow, 2006, pp- 502-518 & Grego, 2020, pp- 138-143) and therefore I think that finally, the law of inheritance of the Republic of Northern Macedonia should be rebuilt and modernized, especially in the field of incorporation of the extramarital partner as legal heir⁴ (Law of Inheritance of North Macedonia, article 4, 1996). Moreover, a major drawback of the existing Law on Inheritance is that it contains numerous legal gaps, i.e. there are issues that are not regulated and that create problems in practice, which leads to legal uncertainty in the field of inheritance. This legal uncertainty stems from the fact that numerous legal institutions in the Macedonian Law on Inheritance are not regulated at all, one of them being the inheritance contract⁵ (Inheritance Law of the Republic of Northern Macedonia, article 6, 1996)

Thus, I think that the Republic of Northern Macedonia should at least follow the contemporary trend of inheritance regulation that is being done by the states of the territory of the former Yugoslavia and in this case should incorporate the inheritance contract as a basis for inheritance. This legal basis for inheritance also exists in Bosnia

¹ Pursuant to Article 443 of the Constitution of the Republic of Macedonia, the Assembly of the Republic of Macedonia at its session held on November 17, 1991, adopted a DECISION DECLARING THE CONSTITUTION OF THE REPUBLIC OF MACEDONIA - The Constitution of the Republic of Macedonia was adopted, which held on November 17, 1991.

² LAW ON INHERITANCE (Published in the Official Gazette of the Republic of North Macedonia, No. 47 of 12.09.1996); Law database - www.pravdiko.mk

³ Jan Kok – Cohabitation in Europe : a revenge of history, Journal : The History of the Family , Volume 20, 2015, ISSN 1081-602X; page 479-514; 2015 & Anne Barlow - Cohabiting relationships, money and property: The legal backdrop - Journal of Socio-Economics 37(2):502-518, 2006 & Christandl Grego – Succession rights for cohabitants, - Edinburgh Law Review. Jan2020, Vol. 24 Issue 1, p138-143. nr./2020.

⁴ Because, the extramarital partner in the Republic of Northern Macedonia is not presented as a legal heir in inheritance law; however, this right is granted to persons who have a blood relationship, which relationship arises due to the existence of an extramarital relationship between the testator and his heir. This is confirmed by Article 4 of the Law on Inheritance of the Republic of Northern Macedonia, 1996.

⁵ Inheritance Law of the Republic of Northern Macedonia, 1996, Article 6.

and Herzegovina¹ (Law of Inheritance of Bosnia and Herzegovina, article 5, 2014) as well as in the Republic of Serbia, where it is provided that such a contract could be concluded only between the spouses² (Civil Code of the Republic of Serbia, Chapter IV – Contracts in inheritance law, article 2776) . Thus, we can say that the law of inheritance of the Republic of Northern Macedonia from 1996, has not brought any major innovations compared to previous laws which were implemented in the territory of our state. This applies to inheritance in general as well as for the compulsory portion of the inheritance in particular. What is worth mentioning is the fact that, on the occasion of the adoption of the first civil code in our country, which must be adopted in the near future, radical changes and modern reforms must be made and will be made in the sphere of inheritance law.

Thus in the Republic of Northern Macedonia, the commission for preparation of the Civil Code prepared important reforms of the inheritance legislation regarding the introduction and detailed regulation of the inheritance contract, ensuring the legal right of inheritance of the child conceived after death, the introduction of the possibility for extramarital partners to present themselves as legal heirs, the change of the legal nature of the right to a compulsory portion of the inheritance and the provision for it to be obligatory, to introduce subjective criteria for the necessary heirs from the first hereditary order, to provide a three-year period for gift returns, to introduce a notarial will, to create a register of wills, to ensure the exclusive competence of notaries in the field of inheritance agreements and so on³ (Mickovic, 2018). Therefore, we can say that the Republic of Northern Macedonia, in a not too distant relative, will join the contemporary trend and the way of regulating the inheritance in general and the compulsory portion of inheritance in particular based on European civil codes as well as changes made in recent decades in neighboring states.

¹ LAW ON INHERITANCE IN THE FEDERATION OF BOSNIA AND HERZEGOVINA - "Official Gazette of the Federation of Bosnia and Herzegovina", No. 80/14 of October 1, 2014, Article 5 (3) Inheritance rights are acquired under the provisions of this law, will or law.

² Government of the Republic of Serbia, Commission for the drawing up of the civil code, Civil Code of the Republic of Serbia, Chapter IV – Contracts in inheritance law, article 2776.

³ Dejan Mickovic - "Contemporary tendencies in the inheritance legislation and the need for reforms of the Macedonian inheritance law in the Civil Code" & Angel Ristov - "The most important reforms in Book IV - Inheritance relations from the Draft Civil Code of the Republic of North Macedonia", - SCIENTIST "Civil Code of the Republic of North Macedonia: a factor for legal certainty and the rule of law" - the seminar "Civil Code and the reform of Macedonian inheritance law", organized by the Institute for Legal and Economic Research and Education "Juridika Prima" - Skopje, 2018.

THE ROLE OF NOTARIES IN INHERITANCE PROCEDURE IN THE REPUBLIC OF NORTH MACEDONIA

"The overload of the courts with undisputed cases is enormous".¹ (ЈАНЕВСКИ, 2019, pp-30) This slows down the solving of these cases, as well as other disputed cases. Integration processes, in addition to reforms and other requirements, require changes in the judiciary, in particular, insist on faster solving of cases and to ensure faster legal protection of procedural subjects. This process started in 1996 with the adoption of the first Law on Notaries² (Law on notaries of North Macedonia, 2009) and as such continues today. Finally, the adoption of the new Law on non-contentious procedure³ (Law on non-contentious procedure of North Macedonia, 2008) in 2008 enabled the transfer of powers from the court to the notaries known as "trustees of the court", who work and function in the region of the Basic Court (Law on non-contentious procedure of Republic of North Macedonia, article 127-131).⁴ Prior to the enactment of the 2008 LNP, the testator's estate was decided by a single judge from the Basic Court, regardless of whether or not there was a dispute between the parties, or who the heirs were, whether there were property disputes, which part of the inheritance is of the deceased or which parts belonging to the heirs.

Article 136 of the Law on Inheritance⁵ (Law of Inheritance of Republic of North Macedonia) clearly stipulates that the supervision during the performance of the function of the notary public in deciding the entrusted case is done by the body that has entrusted the case to the notary public. During the inheritance procedure conducted by the notary public, the court may confiscate the inheritance case if it finds that he/she does not perform his/her function in a professional manner, in accordance with the Law or in accordance with the Code of Professional Ethics of notaries. In this case, the court will ask the notary public to return all documents and records related to the entrusted case. In cases when the notary public refuses to return such documents, "the court may fine the notary public" (paragraph 4, Article 138). Supervision of the work of the notary public is also performed after the completion of the inheritance procedure, ie the decision made by the notary public, where it is allowed to file an objection against that decision, which is decided by the court.

2.1 The procedure of the notary public on inheritance case/procedure

¹ Јаневски.А. *Потреба од растоварување на судовите од неспорни работи*, Нотариус, nr.12, pg. 30

² Law on notaries, "Official Gazette of Republic of Macedonia", nr. 55/07, nr. 86/2008, nr. 39/2009, nr. 135/11

³ Law on non-contentious procedure, "Official Gazette of Republic of Macedonia", nr 9/2008

⁴ Articles 127 – 131 from Law on non-contentious procedure of Republic of North Macedonia

⁵ Article 136 - Law of Inheritance of Republic of North Macedonia

The inheritance procedure, conducted by a notary public as a trustee of the court, always begins after the receipt of the case by the President of the Basic Court, within 8 days from the day when the case is registered in the relevant court registers. The notary authorized and competent for conducting the procedure, after the submission of the case by the court, has the duty to check the death certificate and to determine whether the death certificate is complete or not. If the death certificate contains all the necessary data, the notary public will continue with the procedure. However, in many cases, to notaries are delivered incomplete death certificates, and in some cases only excerpts from the registry of the dead. In this case, the notary public can act in two ways: a) to complete or compile the death certificate himself, or b) to entrust the completion or compilation to the competent registrar.

The hearing for deciding for the inheritance of the deceased, is the central and most important part of the inheritance procedure, which is held immediately after the notary public, as a court trustee, undertakes all necessary procedural actions, which must be taken according to the Law on non-contentious procedure. Pursuant to Article 167 of the Law on non-contentious procedure, the notary public will "schedule a hearing"¹ (Law on non-contentious procedure of North Macedonia, article 167) when he deems it necessary or when requested by one of the persons summoned to the inheritance (heirs, legatees, or third parties). All heirs invited and interested in the inheritance of the deceased person are invited to the hearing. "The hearing for the deciding of the inheritance property is conducted orally"² (Јаневски & Камилоска, 2020, pp-132) and as such is considered a central part of the whole procedure. All issues and problems related to the inheritance property of the deceased will be discussed at the hearing. Such are considered issues related to the number of heirs, the size and value of the inheritance parts, as well as many other important issues for the procedure.

The hearing always begins with an "invitation" (Law on non-contentious procedure of North Macedonia, article 167)³. The invitation is delivered to all persons who in one way or another have an interest in discussing the deceased legacy. According to the Law on contentious procedure⁴ (Law on contentious procedure of North Macedonia) and Law non-contentious procedure, the invitation should contain all the data about the deceased person and the heirs, such as: name, surname, address of residence. In addition, the summons also contains data on the address of the notary public's office, as a court trustee, as well as the date and time of the hearing.

¹ Article 167 from Law on non-contentious procedure

² Јаневски.А, Зороска - Камилоска. Т, pg. 132

³ Article 167, pg. 2 from Law on non-contentious procedure

⁴ Law on contentious procedure, "Official Gazette of Republic of Macedonia", nr. 79/05, 110/08, 83/09, 116/10

The Notary Public shall also inform the participants in the procedure that they are obliged to submit to him all the legal acts that the testator had at his disposal before his death (Law on non-contentious procedure of North Macedonia).¹

The notary public in the invitation for hearing will inform the participants about their right to be able to give a statement regarding the acceptance or to give up from the inheritance part until the end of the procedure (Law on non-contentious procedure of North Macedonia, article 167) .²

After the invitations for participation in the hearing for discussion for the inheritance have been sent, and after the notary public has taken the statements from the heirs for their acceptance as heirs, the next step of the notary public in the hearing is to determine the heirs and their inheritance parts on the basis of a law or a will, if the deceased left any. So, at the hearing, the heirs, legatees and other persons who have some interest from the testator will be informed about their rights and obligations arising from their inherited parts. If there are no disputes between the subjects during the inheritance procedure, the notary public will complete the procedure with a final decision. But in practice it often happens that a dispute arises. In this case, the notary public is obliged to stop the procedure and to advise the subjects to start a litigation procedure before the competent court.

2.2 Decision for declaring the heirs

After holding the hearing and after taking the statements of the heirs, the notary public is obliged to complete such a procedure with a decision, i.e. to decide for the inheritance rights. With this decision, the notary public finally determines the heirs of the deceased, who have the right to inherit his property (Article 177). The decision for inheritance has a declarative nature, because with it the heirs are only declared as heirs of the deceased. The final decision for inheritance should be submitted immediately to the Public Revenue Office, because the Law governing these taxes stipulates that the tax liability for payment of inheritance tax arises at the moment of the validity of the decision for inheritance. When it comes to concluding a gift agreement, the tax liability arises at the time of concluding the same agreement (Article 15 of the LPT). The Law on Property Taxes³ (Law on Property Taxes, 2004)

¹ The notary public, in accordance with Article 167 of the Law on non-contentious procedure, in the invitation for hearing is obliged to point out to the heirs that if the testator left a testament, to submit it in writing, i.e. to submit the document in which the oral testament is registered or to inform witnesses about the oral testament.

² The notary public is obliged to inform each participant in the procedure that for each of their absence from the hearing, as well as for each of their refusal to give a statement, he will decide on their right and the property of the deceased, based on the data owns at that moment. Art.167 from Law on non-contentious procedure.

³ Law on Property Taxes, "Official Gazette of Republic of Macedonia", nr. 61/2004

also provides relief when it comes to paying inheritance or gift tax (Law on Property Taxes, 2004, article 17) .¹

The data (content) of the inheritance decision are precisely defined by the Law of non-contentious procedure (Law on non-contentious procedure of Republic of North Macedonia, article 177) .²

At the beginning the decision contains data about the deceased, such as: name and surname, father's name (for married women maiden name), profession, date and place of birth, citizenship and social security number. In addition, the inheritance decision contains data that are necessary to determine the size of the inheritance part. Such data are considered the data on the real estate rights, which the notary public can provide from the cadaster books, as well as the data on the real estate. Then, in the decision, the data on the heirs take an important place, who with the validity of this decision will be the bearers of the rights and obligations that were previously on the deceased person. Data of the heirs are: name, surname, father's name (women maiden name), place of residence and their social security number. In addition to the identification data of the heirs, the inheritance decision will include all data related to the size (value) of the inheritance, the base of inheritance (law - will), as well as the heir-deceased relationship (spouse, parent, child, adopted children, etc.).

The decision for inheritance also contains data regarding the inheritance rights of the heirs (whether the right of the heir is postponed until the fulfillment of a condition, which condition depends on a termination condition (order), or is limited by the right of usufruct or some other law). Thus, this section will indicate the ways and conditions for exercising the rights of heirs. Finally, the decision will also include the data referring to the legatees and third parties to whom the legacy, usufruct or some other right from the inheritance belonged, which indicates exactly that right (Art. 177, para. 5 of the Law on non-contentious procedure). Such data are: name, surname, ID number, place of residence and their profession.

At the hearing for deciding about the inheritance property and rights, the heirs may reach or propose an agreement on the division and the manner of division of the inheritance. This agreement will be accepted by the notary public only if it is not

¹ Inheritance tax and gift tax is not paid by the heir, i.e. the recipient of the gift from the first inherited order, the heir, i.e. the recipient of the gift from the second inherited order, i.e. the received apartment as a gift, i.e. family residential building if he lived with the testator, i.e. the gift giver in a joint household at least one year before the death of the testator, i.e. at the moment of receiving the gift, provided that he and his family members do not have another apartment, i.e. a residential building, the second heir inherits, i.e. receives agricultural land if his agriculture is a basic activity and who lived with the testator, i.e. the giver of the gift in a joint household at least one year before the death of the testator, i.e. the giver of the gift, Article 17, Law on Property Taxes, Official Gazette of the Republic of Macedonia, no. 61, 2004 .

² Article 177 from Law on non-contentious procedure of Republic of North Macedonia

contrary to the rules of the Law on non-contentious procedure, which regulate this procedure. There are a number of cases where such agreements are contrary to this Law. Such cases are when the agreement is reached as a result of violence, threat or similar. When it is determined that the agreement between the participants is in accordance with the Law on non-contentious procedure, the notary public will enter such an agreement in the decision for inheritance (Law on non-contentious procedure of Republic of North Macedonia, article 177) .¹ The notary public is obliged to hand over in writing the decision for inheritance, with which it is decided about the inheritance rights, to all heirs and other persons who have submitted to the notary public a request for exercising some right from the inheritance property of the deceased. The notary public is also obliged to send the decision on inheritance to the participants and to give them legal advice on their right to file an appeal within 8 days.

CONCLUSION

The profession of notary in the Republic of North Macedonia has existed for 25 years. The notary public dates back to 1998, when the first notaries public who performed the public service were elected on the systematic basis of the Law on Notary Public Affairs of 1996, which regulated for the first time the basic competencies of the notary public as an independent, sovereign and public service. The first notaries public in the Republic of North Macedonia started working on June 15, 1998, and soon after, the Notary Chamber of the Republic of North Macedonia and its bodies were established in the same year. The Notary Chamber of the Republic of North Macedonia takes care of the legal operation of notaries, conscientious and responsible performance of the notary service, preservation of reputation and honor of notaries, protects their rights and interests, decides on their rights, obligations and responsibilities. And when it comes to the subject about inheritance, notaries in our country have some roles. According to the legal framework of the Law on Inheritance of the Republic of North Macedonia, the testator can express his last will to a notary public as a court trustee. The legal system of the Republic of North Macedonia does not provide for the existence of a special type of will in the form of a notary will. According to the Law on Notary, notaries public can compose a will in the form of a notary act according to the provisions that apply to compiling a court will contained in the Law on Inheritance. And when it comes to inheritance procedure, the hearing for deciding for the inheritance of the deceased, is the central and most important part of the inheritance procedure, which is held immediately after the notary public as a court trustee, undertakes all necessary procedural actions, which must be taken according to the Law on non-contentious procedure.

After holding the hearing and after taking the statements of the heirs, the notary public is obliged to complete such a procedure with a decision, i.e. to decide for the inheritance rights. With this decision, the notary public finally determines the heirs

¹ Ibid

of the deceased, who have the right to inherit his property. The decision for inheritance has a declarative nature, because with it the heirs are only declared as heirs of the deceased. The final decision for inheritance should be submitted immediately to the Public Revenue Office, because the Law governing these taxes stipulates that the tax liability for payment of inheritance tax arises at the moment of the validity of the decision for inheritance. The notary public is obliged to hand over in writing the decision for inheritance, with which it is decided about the inheritance rights, to all heirs and other persons who have submitted to the notary public a request for exercising some right from the inheritance property of the deceased. The notary public is also obliged to send the decision on inheritance to the participants and to give them legal advice on their right to file an appeal within 8 days.

So as a recommendations we think that even that notaries in our legal system play a huge role when it comes to inheritance in general and inheritance procedure as well, still we think that some changes should be made. Unlike the Law on Inheritance of the Republic of North Macedonia, which as *lex generalis* does not recognize the notary will, in comparative law the form of the notary will is widely accepted. The notary will is accepted in: Italian law, French law, Spanish law, German law, Russian law, Chinese law, Japanese law, Turkish law. Which means, we think that we need to have further studies in this topic and to make some research when it comes to the notary will which is accepted in majority of countries in Europe. And when those studies will be made we share our thinking that, we need to incorporate those forms of notary will into our legal rules.

According to the solutions of comparative law, the notary will is present in many countries, and given the current competencies of notaries in the field of inheritance, we believe that it is necessary in the future reform of inheritance law to provide a notary will as a separate type of will within the Law on Inheritance of our country.

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Informal Learning of Indigenous Music and Dance Through Observation and Imitation as a Filter Through Which All that is Encountered During the Transmission Process is Interpreted: the Case of Bapedi Children's Musical Arts

Morakeng Edward Kenneth Lebaka

University of Zululand – KwaDlangezwa Campus; Faculty of Arts, Department of Creative Arts; South Africa

Abstract

In Greater Sekhukhune District Municipality, Limpopo Province in South Africa, learning indigenous music and dance through observation and imitation seems to be a dominant and prominent practice of situational learning. Bapedi people tend to have their own distinctive music genres and purposes for their social events. Bapedi children's musical arts reveal much about Bapedi people and their way of life. This paper sets out to discuss the transmission process of indigenous music and dance through observation and imitation; and musico-artistic skills acquired by children with at least a partial degree of independence during social and cultural events. In the Bapedi culture, music is a natural phenomenon. Dance too, is not excluded. It is a significant aspect of Bapedi people's music tradition and a ubiquitous medium of communication or expression. Informal interviews, direct observations and video recordings were employed to collect data. The following research questions therefore guided this study: 1) How is social interaction in the Bapedi society viewed as a critical component of situational learning involving the transmission of children's musical arts? and 2) Do children in the Bapedi society have the ability to recognize and interpret what musical activity/event is taking place and to participate in ways sensitive to the context? The investigation has revealed that in the Bapedi culture, informal learning of indigenous music and dance; and social processes are indissolubly linked and take place within contexts in which members of the society relate to each other and their environment. The results of this study have further shown that the spectrum of learning experiences can range from accidental, unintentional, or reluctant forms of learning to active, intentional, involved, and highly valued forms of learning. It was concluded that in early childhood, it is play that underlies almost all informal learning and holism is a dominant

principle in music and dance enculturation process of Bapedi children's musical arts.

Keywords: Indigenous music and dance, informal learning, Bapedi society, children's musical arts, situational learning, Greater Sekhukhune District Municipality.

INTRODUCTION

The purpose of this study is to describe how social interaction in the Bapedi society is viewed as a critical component of situational learning involving the transmission of children's musical arts, and to examine the musico-artistic skills acquired by children with at least a partial degree of independence. Bapedi people have enriched their culture that has wisdom in the local knowledge system to maintain their musical tradition, as well as children's musical arts. They speak the language called Sepedi. It is one of the 11 official South African languages. Bapedi people have always managed to retain their cultural heritage. This society is not a primitive society or an isolated tribe, instead it is a society that has followed a modern lifestyle, but Bapedi people still maintain their customs and tradition, have a mind-set that is far ahead, because they are rich in philosophical teachings and values that sublime and obedient to the norms, socio-cultural values resulting from the decisions of their cultural heritage and identity. In Greater Sekhukhune District Municipality, Limpopo Province (see Fig. 1), music making is closely related with and recognized as a social activity that reinforces and fosters social cohesion, communal music making and collaborative participation. Children learn by observing and listening to activities of adults and other children. This research study was conducted at Ga-Marodi village, Greater Sekhukhune District Municipality, Limpopo Province in South Africa.



Figure 1: Geographical Location Map of South Africa showing Limpopo Province.

Error! Hyperlink reference not valid..com/world/south-africa-satellite-image.shtml [accessed 09 February2022].

Traditionally, in the Bapedi society, a child's early development has been perceived as a joint responsibility of the home, the school and the community (Lebaka 2017:151). Lebaka further remarks that the extended family system provides the child with multi-musical learning situations of expected roles, obligations and sanctions. Normally, the child is born of a family to the community (2017:151). During the months of pregnancy, the mother, while attending socio-musical occasions, the child begins to absorb the community's musical feeling. Some of the daily chores such as sweeping and pounding follow regular rhythmic pulsation. These gradually develop the child's pulse sense. My investigation has led me to conclude that whenever children's musical activities are going on in the homestead, a young baby carrier may participate while carrying the baby. The positive way to make the point is that as the baby carrier carries the baby and participates in the musical activities, the child being carried gradually absorbs the dance sensibility of the community. It is in fact, superfluous to argue that the first and probably the most foundational agency of traditional Bapedi Musical Arts education policy is the family – the extended family. Lebaka (2017:106) further believes that in indigenous Bapedi music education

system, there is no point in the life cycle at which the creation of musical awareness could be said to be 'complete'. He is of the opinion that the content of any music training is specific at hand, that is, what is taught is how to behave musically in order to produce music sound acceptable to the members of the community (2017: 106). During my field research, I have observed that through music, children learn about themselves and retain, maintain and renegotiate their identities. Adults teach children about their musical heritage as a way in which to protect, support, perpetuate and preserve the Bapedi cultural heritage and identity. These observations are endorsed by Custodero et al (2003:560) who believe that all children are born with natural musical ability which vary from child to child. These scholars argue that rhyme, rhythm, song and movement have historically been used as a powerful teaching tools that have infused the values, mores and customs of cultures and societies. The above views are supported by New (1983:25), who observes that traditionally, Africans are exposed to music and movement from the time they are born. According to New, in early childhood, music is absorbed through the pores of the skin, and there is no formal teaching and no designated teacher (1983:25). In his view, before they walk, most children are carried on their backs, where they will continually hear working songs (1983:25). New further asserts that sometimes, it seems that music education starts even before birth, and there are songs to advise the expectant mother (1983:25). Corroborating the above views, Emberly and Davhula (2016:439) observe that children and young people often engage with musical arts' practices to inculcate and sustain their voices within a particular context, whether it is culture, community, place or space. Emberly and Davhula are of the opinion that as tradition is an evolving and changing construct, understanding where and how children and young people learn music is important (2016:444). These scholars have discovered that in Vhavenda communities, in Limpopo Province in South Africa, young people utilize their learned musical skills as a means to create and voice cultural capital in a multicultural musical landscape (2016:450). They suggest that it is important to preserve our culture, and the most effective mode is through traditional music.

THEORETICAL FRAMEWORK

The present study is based on the theory of knowledge as proposed by Bernstein Basil (2000), which views music as something profoundly experienced and embedded in social life (Carver 2017:130). Like in this study, indigenous music in the Bapedi culture is regarded as profoundly experiential and is embedded in the Bapedi people's cultural context in their daily social and cultural activities and in social life. Bernstein theory advocates for horizontal knowledge structure, whereby new knowledge is introduced in the form of a new "language" that does not depend on the previous concepts but has its own logic (Carver 2017:128). He regards 'horizontal discourse' as everyday knowledge. For him, horizontal discourse concerns every day or common knowledge, that is, the knowledge needed to perform tasks of everyday life

(2000:157). Bernstein postulates that learned through modelling, horizontal discourse is likely to be oral, local, context dependent and specific, tacit, multi-layered and contradictory across but within contexts; the crucial feature is that it is segmentally organized (2000:159). He asserts that this segmental organization means that horizontal discourse is concerned with the immediate context, and what is known in one context cannot be transferred or applied in a different context (Carver 2017:127); and this is precisely what is happening in the Bapedi people's cultural context. Moreover, Bernstein observes that 'horizontal discourse' is directed towards acquiring a common competence rather than a graded performance (Carver 2017:127). Further, he elaborates that 'horizontal discourse' should lead to the type of music that all members of the community can perform and it becomes a context (Carver 2017:127). He points out that it is not simplicity or complexity that differentiates horizontal and vertical discourse, but the degree to which the discourse is systematically organized. Finally, Bernstein describes music as a member of the Humanities, and as having a horizontal knowledge structure.

Building on Bernstein's theory of knowledge structures, Maton Karl asserts that Bernstein's conceptualisation, while suggestive, is dichotomous and does not allow for the subtleties and variations within knowledge fields (Maton 2014:47). Maton concurs with Bernstein but suggests that he extends his theory to allow for more fine-tuned analyses and interpretations. The Bapedi people's cultural context is ideal for this model since, when the Bapedi children's musical arts are analysed and examined through the theoretical framework of this study, the 'horizontal discourse' focuses on new knowledge which is related to Bapedi people's daily activities and everyday life, as well as the transmission processes, context, structures and performance styles. This theory is applicable to this study because in the Bapedi culture, there are musical types for children, for men, and for women. Where a musical type is meant or rather prescribed for men, women do not participate in its performance; neither do men participate in musical types for women. Children hardly participate in musical types for adults, nor do adults interfere in children's games and songs except when teaching them such songs. My interpretation of the model in relation to Bapedi people's cultural context is that in the Bapedi culture, music is learned in a local context and the horizontal discourse is concerned with the immediate context, and what is known in one context cannot be transferred or applied in a different context. The theory is adopted for this study because in the context of this study, Bapedi children's musical arts is a member of the community (Humanities), has a horizontal knowledge structure, and is oral, local, context dependent and specific.

This study is also based on an ethnographic approach as a proposed culturally embedded method aimed at contributing towards formulating a philosophy that informs content and curriculum. The study is enriched by Tedla's (1995:190) argument that the modern education system has much to learn from indigenous African education. In approximation to the present study, other scholars have

employed an ethnographic approach. Included under this approach are Nettl (2005), Nzewi (2005) and Omolo-Ongati (2009:9). In particular, Omolo-Ongati (2009:9) has examined an ethnographic approach as a means of comprehending the context and facilitating the formation of a philosophy. Like in this study, her model proposes an ethnographic approach based on research into local music-making practices, beliefs, values, indigenous knowledge and education systems. Corroborating the above observations, Bruno Nettl, a major researcher and ethnomusicologist, states that 'For any culture, ethnomusicologists would wish to know about ways in which music is created, and is conceived as being created whether it is the result of inspiration, which musicians sometimes ascribe to influences of supernatural forces, or simply the result of hard, disciplined work (Nettl 2005:34). He argues that this is the central issue in the understanding of music and of music in culture. Endorsing Nettl's views, Nzewi (2005:1) observes that music in Africa is a philosophy of life; a transaction of meaning and processes of communal living ... a process of conducting relationships, coordinating systems, coping with the realities of human existence and probing the supernatural realm or forces. In the next section, I will discuss the research strategy for this study.

RESEARCH STRATEGY

The primary source for data collection was oral interviews. Secondary sources included observations, publications and records. Other methods included video recordings and photographing of different rehearsals and performances. This paper addresses the questions: 1) How is social interaction in the Bapedi society viewed as a critical component of situational learning involving the transmission of children's musical arts? and 2) Do children in the Bapedi society have the ability to recognize and interpret what musical activity/event is taking place and to participate in ways sensitive to the context? Data for this study were collected for the most part in the field research of a social ethnomusicological carried out in Limpopo Province from the year 2003-2017. During this period, which entailed doing extensive fieldwork and a literature review, I became interested in music, culture and identity, as well as informal learning. When embarking on this study, I did not encounter challenges in the usage of Sepedi language as I am an insider, and write, read and speak the language fluently. Sincere thanks are due to the leader of Kgwahlana Kgutla Reed Pipes' Music ensemble and members of the ensemble for their time, patience, kindness and for sharing their insightful information about the music genre, informal learning process and the construction of musical instruments. With their permission and guidance, I developed a platform for investigating in-depth information and knowledge, that warranted ease of interrogating and eliciting interpretations and meanings of music, culture and identity, dance and dramatization. It became necessary for me to adopt the research stance of 'observer as participant'. Once the data were obtained, descriptive analysis of how social interaction within the Bapedi cultural context, which is viewed as a critical component of situational learning and

analysis of musico-artistic skills acquired by children with at least a partial degree of independence were performed.

RESEARCH FINDINGS AND DISCUSSION

The results of this study have shown that intent participation is a powerful form of fostering learning. It contributes to impressive learning such as that accomplished by young children. The results of this study have further shown that by attending traditional music festivals, children can unconsciously absorb the beauty of music and strive to reproduce that beauty, reflects beauty in his or her inner self and make evidence in sensitivity (**see photo 1**). This viewpoint is supported by Omolewa (2007: 596) who remarks that:

“traditional African education is usually generated within the communities, and is based on practical common sense, on teachings and experience and it is holistic, and cannot be compartmentalised and cannot be separated from the people who are involved in it because essentially, it is a way of life”

According to Omolewa, traditional education uses the age grade system in which those about the same age are brought together, and efforts are made to ensure that every person develops a set of skills.



Photo 1

In the Bapedi society, by attending music festivals, children can unconsciously absorb the beauty of music and strive to reproduce that beauty, reflect beauty in their inner

self and make evidence in sensitivity, expression and attitude (Ga-Marodi village, Greater Sekhukhune District Municipality, 20.10.2007), Photographer: Jukka Louhivuori.

With regard to the musico-artistic skills acquired by children with at least a partial degree of independence, the investigation has revealed that the simplest and most undifferentiated form of music learning occurs through imitation. During the study, it was established that from the earliest age, Bapedi children have every opportunity to imitate the songs and dances of adults, as most music is performed publicly and children generally follow their mothers everywhere until at least the age of ten (**see photo 2**). The above observations are in consonance with Sillitoe's (1998:227) assertion that indigenous knowledge often facilitates people's skilful management of their resources and people transfer much knowledge between generations by tradition learnt and communicated through practical experience, and are not familiar with trying to express everything they know in words. Sillitoe believes that the use of indigenous knowledge and local participation require a full understanding of the local system (1998:246). Congruent to Sillitoe's belief, Nzewi (1999:76) postulates that during public music events a child has more liberty and scope for participation than adults. According to Nzewi, all through these stages, the child's capabilities are casually monitored (1999:76). Nzewi cautions that it is strongly encouraged to develop, no matter the quality of its efforts (1999:76). In his view, rhythm sense becomes strongly established. Nzewi emphasizes that a children's music group disciplines extroverts as much as it socializes introverts, and children's music making thus imbues balanced, sociable personality and teaches tolerance in early childhood (1999:76). Nzewi (1999:73) further advocates that African music education is largely an informal process, even in instances of musical families and music trades. He is of the opinion that informality does not imply lack of philosophy and systematic procedure in transmitting the knowledge of the music culture (1999:73). Nzewi confirms that in African traditions, opportunities for active participation in music making are abundant, and has observed that children are normally free to make music at all times during the day, in children's groups (1999:74). I very much agree with Nzewi's viewpoint. Communal music making in Africa is democratic. It is meant for the people, by the people and with the people. As such during enculturation process, the child never feels inhibited, nervous or discouraged by the fear of being condemned for making mistakes, but develops confidence through positive adult appreciation, and learns through being helped to feel or recognize and manage mistakes. Nompula (2011:371) shares more insight about the enculturation process of indigenous music with a focus on children musical arts. He observes that in the process of making indigenous music and dance, children are exposed to different African rhythms. According to him, the children are afforded the opportunity to learn these rhythms and how to internalise them. He maintains that exposure to cross-rhythms and syncopated rhythms helps develop children's creative skills. Nompula further opines that through participation in group-clapping, drumming, and music

interpretation through dancing, the children's interpretative skills are developed. He is of the view that as the children are afforded an opportunity to express their musical feelings through dance, they learn rhythmic patterns by rote, memorise and internalise them (2011:372). Nompula suggests that children should be encouraged to participate in a variety of performances, not only to develop their confidence and self-esteem but also to improve their creative skills (2011:372). According to Nompula, spontaneity that prevails in the improvisation process builds children's self-confidence, and develops children's composition and co-operative skills. I applaud Nompula's suggestion for the children to be engaged in a variety of performances. This is necessary because by participating in a variety of performances, not only could the children's self-confidence and self-esteem be developed, but also their composition, creativity and cooperative skills. In agreement with Nompula, Civallero (2007:2) points out that oral tradition present in traditional as well as in urban, westernized contexts, is based on memory, words, sounds and improvisation. He believes that every culture represents an irreplaceable set of values and features, and confirms that stories, knowledge and memory can also be passed down through music and chant (2007:2). In the same vein, Carlson (2011:77) affirms that both play and a game may be experienced together if one is voluntarily participating in an unnecessarily challenging activity for its own sake; but play can be understood as a way of doing something or the particular thing that is done. Carlson regards play as a kind of attitude in contrast to a type of activity (2011:77). He views games as fluid, alluring and durable access points into the play attitude, and believes that games induce play (2011:82).



Photo 2

In the Bapedi society, children are learning through keen observation and listening in anticipation of participation (Ga-Marodi village, Greater Sekhukhune District Municipality, 20.10.2007), Photographer: Pekka Toivanen.

From the observations and interviews, it was established that in the lives of children in rural Greater Sekhukhune District Municipality, creative musical spontaneity in the form of play songs or musical play contributes to the cultural landscape of childhood. Children acquire musical-artistic skill by participating appropriately in shaping contexts in which processes of music-making occur and musical knowledge is generated. Attesting to the observations above, Harwood (1998:54) writes that children learn a great deal from one another whenever and wherever they interact, especially in carefree environments such as the playground. Endorsing Harwood's viewpoint, Mapaya (2011:68) postulates that this is attributed to the fact that children, knowing no boundaries, will follow their friends from one environment to the next regardless of their cultural background. Mapaya elaborates by stating that the free movement is without prejudice and it affords the child a wider childhood experience – musical experience included (2011:68). In his view, much learning takes place in these kinds of situations (2011:68). According to Mapaya, the learning process here involves the child consciously noting items of interest as it follows what is happening in the differing environments as presented by its peers (2011:69). Mapaya further asserts that to enhance the internalisation process, children often act out their observations later, and the impact of these learning phases on children's

makeup is tremendous (2011:69). He is convinced that learning at this level has proved to be effective because there are no prejudices or judgemental tendencies involved. It is a give and take situation where a child and his or her peers play interchangeable roles of both the teacher and the learner throughout the playing session (2011:69). Attesting to the above views, Karolina and Jutta (2010:6) write that what is referred to as indigenous knowledge may contain a wide array of ideas and practices. According to Karolina and Jutta, when dealing with indigenous knowledge, the importance of its social and cultural context is emphasized (2010:8). These scholars believe that indigenous knowledge has become part of development discourse, as a means to involve local communities and make development more participatory (2010:10). In their view, extracting knowledge from local contexts is a subtle way of exercising control (2010:11). Corroborating the above observations, Adams and van de Vijver (2017:116) remark that the relationships are important for how individuals define themselves as these provide them with the respective roles that give a sense of meaning to their lives. Furthermore, Adams and van de Vijver remind us that identity is important for psychosocial functioning (i.e. psychological well-being and socio-cultural adjustment), (2017:116).

CONCLUSION

When the results were examined, it was understood that the learning process is a group activity; it is both a pleasure and a recreation rather than a core. Closer investigation has also revealed that after acquiring the skill, children transfer the experience they have gained from musical involvement in adult groups, drawing their members from those of the lineage or children living in the same homestead. The findings have also revealed that the spectrum of learning experiences can range from accidental, unintentional, or reluctant forms of learning, to active, intentional, involved, and highly valued forms of learning. Attesting to the above views, New (1983:25) opines that African music exists in a bewildering variety of different forms; even within one tribe there may be considerable variation. New writes that children are encouraged to behave like good members of the community through song (1983:25).

The results yielded thus far, have revealed that children and young people often engage with musical arts' practices to inculcate and sustain their voices within a particular context, whether it is culture, community, place or space. It was also established that from the earliest age, Bapedi children have every opportunity to imitate the songs and dances of adults, as most music is performed publicly and children generally follow their mothers everywhere until at least the age of ten. During the study, it was also observed that by attending music festivals, children can unconsciously absorb the beauty of music and strive to reproduce that beauty, reflect beauty in their inner self and make evidence in sensitivity, expression, and attitude. Based on these findings and discussions, it is arguable that children transfer the experience they have gained from musical involvement in adult groups to their own

practice. As active agents, they avail themselves, contributing to the creation of Bapedi children musical Arts that are both individualistic and communal. Regarding acculturation, McGloin et al. (2009:9) state that in the process of dispossession, many knowledge systems have been lost alongside countless languages and the capacity to articulate cultural ways of knowing. These scholars are concerned that indigenous ways of knowing have been marginalised worldwide (2009:9). According to them, this has been integral to the project of colonisation (2009:9). The only solution to the problem according to them, is: “in order to conquer and subdue, a process of subordination is necessary and the outlawing of culture is an effective way of subjugating cultural knowledges”. In a similar note, Kaya and Seleti (2013:33) recommend that African intellectuals should help Africa close the gap created by over four hundred years of domination and marginalisation of African people’s knowledge systems, by rejecting the utilisation of dominant western world view of knowing and knowledge production as the only way of knowing. Whereas these scholars acknowledge that there is no single approach to Indigenous Knowledge Systems (IKS) research, they put emphasis on participatory approaches and methods which incorporate the knowledge and opinions of local people in the planning and management of research activities in their own settings.

Indications from the investigation suggest that the future of the current generation, especially the youth, depends on the knowledge and understanding they acquire from the past, and the wisdom of the past can be built and transferred to suit the present, which can then lead them into a prosperous future. Since the Indigenous Local Knowledge of the Bapedi people is so rich in significance, it could, if it is kept alive, lead to exciting creative possibilities in the present and the future. It is recommended that a research study of this kind should be taken seriously in South Africa for an exploration of indigenous values influencing learning systems. Targeting Creative Arts, Anthropology, History and Ethnomusicology educators/lecturers would also be an important part in an effort to include Indigenous Knowledge and ways of knowing and thinking in the curriculum of both lower and higher education. Based on these findings and discussions, it is arguable that cultural and religious practices of the Bapedi people should not be dismissed at face value as practices overtaken by circumstances and hence irrelevant to the present African community developments needs. The results yielded thus far suggest that Bapedi people should keep and perpetuate their valuable heritage, which is still needed for survival and for the welfare of our next generation.

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The Shared Landscape. Strategies for ethical and democratic living

Vereno Brugiatielli

Abstract

Living is placed within an environmental fabric consisting of infinite abiotic, biotic and cultural threads. Integrated living is required to be part of this fabric. Ethical living, characterised by knowledge, awareness and responsibility towards the landscape is the only way to protect the environment and enhance its biological and cultural wealth to effectively contribute to the fundamental quality of living and man's well-being. Ethical living needs active participation shared by the inhabitants in the processes of protection, transformation and management of the landscape. In turn, such participation requires fostering by the ethics of living. In this study, from a phenomenological and hermeneutic viewpoint, I intend to highlight some fundamental structures of living to demonstrate that democratic participation is a determining factor in contributing to the realisation of integrated living, which is indispensable for respect of the landscape to promote quality of life and man's well-being.

Keywords: Landscape, Ethical living, Democratic participation, Quality of life, Well-being.

Introduction

The history of the landscape is the history of its transformations produced by interacting abiotic and biotic processes, and it is the history of the changes produced by human habitation. Man lives a landscape that is partly the result of his modifications. A destructive living of the landscape fabric produces material, ethical and spiritual degradation in man, and has a negative impact on his quality of life. Ethical living is the only way to enhance and protect the biological and cultural richness of the landscape and thus make a decisive contribution to the quality of living and human wellbeing. Ethical living requires the active and shared participation of inhabitants in the processes of protection, transformation, and management of the landscape. This participation, in turn, needs to be fed by the ethics of living.

Through a phenomenological and hermeneutic pathway, I intend to highlight some fundamental structures of living and then to show that the active participation of the inhabitants, guided by the ethics of living, contributes to respecting the landscape, promoting the quality of living and improving human wellbeing. In the second part, I

aim to point out the practical-operational methods suitable for achieving these goals. I will identify them in those forms of participatory democracy and planning capable of integrating individual and collective interests in order to achieve shared objectives.

Biological and cultural circularity between man and landscape

The landscape includes a multitude of territorial, environmental, biological, historical and cultural elements which are so closely interconnected to constitute a web of interrelations. Man is not outside this web but is included as part of an infinite network of chemical, biological and cultural processes. Man lives the natural and cultural landscape and, by doing so, modifies and transforms it while being changed by it at the same time. Thus, the landscape is not there simply to be contemplated by man. Westerners have separated themselves from the landscape limiting it to a picture subject to aesthetic judgement. In this gnoseological and practical setting man has forgotten the ontological dimension of belonging to the environment. Man's actions are interpreted as being external to nature and the landscape. This type of relationship has misrecognised the fact that man is also the result of the biological and cultural processes produced by the environment (Brugiatelli, 2020, pp 29-34).

The value of the landscape can not only be attributed to its visual and contemplative aspects or to what it offers from an aesthetic viewpoint. Originally, before being an object of contemplation, the landscape ties man to other living beings and material elements. Like man, all living creatures are involved in the landscape with each contributing to "making the landscape", modifying it and, in turn, being changed by the landscape which they have contributed to modifying. Like other living parts, man transforms the landscape but with the difference that he changes it more rapidly with lasting consequences, on a global scale.

Environmental transformations are frequently the result of cultural interventions on the landscape. Man is not only living an environment-territory, but he is also living his own cultural products with which he moulds the landscape. From this perspective, the landscape is also the result of long and complex cultural interventions (Bonesio, 2002, p. 80).

The ethos of living the landscape

Living is specified as relations, or complex interactions. Interaction, rather than relations, because the latter is positioned on a unidirectional level while interaction comprises both activity and passivity, giving and receiving according to circular paths and feedback. Living is circularity with the biological and cultural elements where its ethical sense is fundamental. Living ethically leads to the realisation of a connected living which is integrated with the territory, the environment and the natural landscape (including territory and environment). Such living is a complex living, or "tied" (*complexus*) fabric together with the landscape, being a natural and cultural part of it. Therefore, living cannot fail to be openness. It builds itself and refers to itself

but, at the same time, in its openness it builds itself with respect to a set of abiotic, biological and cultural elements. From this point of view, living does not contrast the landscape, but it constitutes a continuity. Living is the product of man's organisational activities, but such activity proves itself ethical if it is achieved openly and not separately from the abiotic, biotic and cultural context. Living acquires an ethical significance if established through complex interactions.

Originally Ethos also means dwelling, home. In a passage in *Brief über den "Humanismus"* (1976) Martin Heidegger speaks about ethos as living space, as a living place. In *Mille plateaux*, Gilles Deleuze and Piere-Félix Guattari observe that "ethos is both dwelling and manner, country and style" (Deleuze-Guattari, 1987, p. 464). Thus, on the one hand, ethos refers to customs, habits and behaviour while, on the other hand, to living, dwelling, the living relations with the world, with the landscape and place (Venturi Ferriolo, 2002). Living made up of complex interactions reminds man of himself and to search for a sense in his living-inhabiting (Brugiatelli, 2017, pp. 63-64). This meaning is born of care, concern, consideration and regard towards the environment and landscape.

Shared Living

On a biological level living is positioned in the processes of utilisation, consumption and waste of resources. Responsible living is characterised by mindful use, recycling, re-use and renewable energy sources. Over the last century, the market, an abstract yet omnipresent entity, has led to the loss of *status* as inhabitants by transforming people into consumers. According to this model, a good citizen consumes a lot and diversifies consumption, which is promoted as an indicator of well-being. It is time, however, to give people back their *status* as inhabitants and to allow their well-being to coincide with the quality of their living. It is necessary to claim that the good citizen is someone who lives well in the landscape and possesses an ecological conscience and thereby acts responsibly taking care of the landscape and reducing the impact of his actions on the environment.

Shared living of the landscape also means participating and taking part in the discussion of projects, choices, decisions relating to the protection and changes to the landscape. Living can be interpreted as a political action in the sense that it is seen as exercising shared democracy. The ethical goal of the good life needs, therefore, to be based on the doctrine of a shared and planned democracy which, according to Hannah Arendt should be achieved by people able to identify common interests and to collaborate to transform them into global actions (Arendt, 1977, pp. 103-108). This idea of democracy is related to Ezio Manzini's idea of *planned democracy* in *Politiche del quotidiano* (Manzini, 2018) in which he writes about the integration of individual and collective interests to achieve shared objectives.

The implementation of democratic practices through shared procedures and inclusive measures is doubtless fundamental for the protection of the distinctive and

characteristic features of the landscape and for decisions on responsible construction with regard to the environment and its cultural identity. This practice is necessary in order to raise collective awareness of living the landscape.

Knowledge and awareness, gained by the inhabitants of their living the landscape, are essential for the development of a democratic movement to protect and promote the environmental and landscape patrimony. Through the principal procedures of a shared democracy the inhabitants can implement various forms of mediation with the institutions to establish constructive channels of dialogue. Alternatively, they can activate initiatives or evaluate State proposals. The collective defence of the landscape often contrasts economic interests making any form of dialogue difficult, if not impossible. Certainly, however, the confrontation between the opposing parts must not descend into any form of violence. When economic interests become the only criteria upon which a choice is made to realise certain works, awareness and conscience are not always sufficient to preserve, defend and enhance the landscape patrimony. Yet, neither is it possible to accept nor reject the construction of the necessary infrastructure for economic development. The defence of the landscape and economic interests should find agreement based on reasonable compromises which guarantee, on the one hand, the protection and enhancement of the landscape and, on the other, the possibility to realise works which are effectively useful to the community from an economic and social point of view and not advantageous for particular economic interests.

Planning and implementing integrated living through processes of democratic participation

The protection and enhancement of the landscape patrimony (nature and culture) does not exclude changes and innovations, such as the construction of infrastructure. Conservation for its own sake may endanger the enhancement of the landscape and the development of integrated living, which, as far as possible, respects the biological rhythms and ecosystems protecting the cultural patrimony. Innovating does not mean destroying when it clarifies the natural and cultural potential of a certain landscape.

Knowledge and awareness of one's landscape are fundamental to promote and realise works to trigger the potential of the landscape involving the institutions through means characteristic of an active democracy. If it is the institutions, public bodies or private firms that are promoting innovations, the inhabitants should be informed about the planned works and be made aware of the possible natural, social and economic effects. The risk analysis which certain works represent for the natural and cultural landscape, as well as the quality of life should be openly discussed. With constructive debate, the planned project could be modified in the light of observations put forward by a committee of local residents. Some large-scale building projects, which are perceived as a threat to their landscape and the quality of life often awaken

the sense of belonging motivating the inhabitants to rediscover the natural and cultural richness of their territory.

A community can become the protagonist of a living integrated with the landscape through activities that enhance the resources, respect the biological cycles and ecosystems, promote and appreciate the natural and cultural patrimony (Capra, 1982). A shared democracy of the landscape possesses the potential to activate a network of strengths, competencies, knowledge and capabilities able to regenerate the territory, the environment and the landscape. This can be done by planning economic activities which can generate both material and spiritual wealth with limited environmental impact.

Final considerations

The safeguard and protection of the landscape patrimony does not mean scarce economic development. To the contrary. Economic activities, such as organic agriculture, produce quality products because they optimise the resources of the territory and have a low environmental impact. Organic farming bonds with many other economic activities such as eco-tourism, commerce, handicrafts and small industry. Such low environmental impact activities can be supported by a transport system fuelled by renewable energy sources. In this way a network of interacting activities is established forming an integral part of the landscape. Therefore, the landscape is no longer considered a commodity.

Alberto Magnaghi defines this network of activities integrated with the territory and landscape as “multi-faceted” made up of: new-farmers, new-artisans (traditional, innovative, digital), environmental and cultural associations, movements focusing on local and global issues (against climate change, for democracy and human rights), youth groups, inhabitants in the peripheries promoting self-governing living experiences, ethnic movements, mutual help associations, cooperatives with ethical, fair, environmental and social aims, groups promoting self-sufficient consumers, critical consumption and fair purchase, fair trade etc. (Magnaghi, 2020, p. 217). Such activities, through common and shared planning channels, gradually enable communities to reclaim their territory, landscape, knowledge and practices.

Besides, they promote and enhance the environmental and landscape resources to such an extent as to positively influence the quality of living which fosters complex relationships with the landscape. In order to boost such processes, forms of shared and planned democracy, which can integrate individual and collective interests to realise shared objectives, are needed. These shared objectives are attainable by means of choices, actions, and activities based on knowledge, awareness and shared responsibility translated into practices through democratic channels. Therefore, it is a matter of promoting ethical and integrated living characterised by: 1. an *ethos* which differentiates it from other types of living; 2. actions dictated by care, concern, involvement and responsibility with regard to the landscape (Mortari, 2020, pp. 145-

150); 3. an open and welcoming structure towards diverse cultures that is capable of recognising the cultural identities to which it contributes to producing; 4. enhancing the landscape together with the growth of man's well-being.

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Emergency care unit and patient satisfaction, during Covid-19 pandemic: Durres Hospital case

Rezarta Kalaja

Head of Department of Medical Technical Sciences, University Aleksander Moisiu,
Durres.

Abstract

The outbreak of covid-19 is having a significant impact on both the physical and social environment. Over 108.2 million people still uncounted (1). Among the sectors of a hospital, the emergency service is one of the most challenging in relation to the promotion of care quality. Achieve good levels of satisfaction of patients of these services is a difficult task (2) due to weaknesses caused by overcrowding, lack of hospital beds, lack of human resources and inadequate physical infrastructure to meet all demand (3). The difficult situation created, during the pandemic outbreak, focused the entire influx of patients, in the emergency service, which encountered the initial difficulties, of facing a completely unknown and unimaginable crisis, deepening the above problems. Patient satisfaction, as a perception and an attitude that a consumer can have or view towards a total experience of health care, is a multidimensional aspect, which represents a vital key marker for the quality of health care delivery (4). The purpose of this study is to assess patient's satisfaction with the emergency service in the regional hospital of Durres, during Covid-19 pandemic period, as well as to identify the main problems that led to patient's dissatisfaction with the quality of service. In a for month period, 200 patients who received services at this hospital while affected by covid-19, were interviewed. A structured questionnaire was used to collect data from participants. The collected data were processed by SPSS statistical software. The main result of the analysis, showed that 62% of the respondents were satisfied with the service received, and that the degree of dissatisfactions on the rest of the patients was mainly related to the large number of patients hospitalized ate the same time, which created uncertainty among patients, about the service received and the fear to neglect. Preparing staff to deal with such critical situations is a must, as a good proportion of patients often perceived the insecurity of physicians and nurses in providing first aid. The overall opinions about the satisfaction level of patients for the availability and empathy of doctors in the hospital were good. As a conclusion we can say that there is a strong positive relationship between patients satisfaction and the promptness in the service as well as the necessary spaces for the treatment of patients.

Keywords: Covid-19 Emergency care unit, patient satisfaction, regional hospital Durres.

Introduction

The outbreak of covid-19 is having a significant impact on both the physical and social environment. Over 108.2 million people still uncounted (1). Among the sectors of a hospital, the emergency service is one of the most challenging in relation to the promotion of care quality. Achieve good levels of satisfaction of patients of these services is a difficult task (2) due to weaknesses caused by overcrowding, lack of hospital beds, lack of human resources and inadequate physical infrastructure to meet all demand (3). The difficult situation created, during the pandemic outbreak, focused the entire influx of patients, in the emergency service, which encountered the initial difficulties, of facing a completely unknown and unimaginable crisis, deepening the above problems. Patient satisfaction, as a perception and an attitude that a consumer can have or view towards a total experience of health care, is a multidimensional aspect, which represents a vital key marker for the quality of health care delivery (4).

In Albania covid-19 pandemic has exposed problems related to health care, and demonstrated the system problem through the patients access the health care service (5). The increases of cases with severe acute respiratory syndrome in Albania over bounded the healthcare system. We had limited human resources; general practitioners provided long time waiting form health service in the emergency room and service (6).

The impact of the COVID-19 pandemic in the health care system in Albania is noticeable. In this study our purpose is to assess patient's satisfaction with the emergency service in the regional hospital of Durres, during Covid-19 pandemic period, as well as to identify the main problems that led to patient's dissatisfaction with the quality of service.

Methods

This is a four-month study were patients who received services at this hospital while affected by covid-19, were interviewed. In total, 200 patients responses to the questionnaire from September 2020 till January 2021. The questionnaire was designed in closed questions and the patients were answered as an interview form. The survey contained a total of 15 questions including data about patient's satisfaction in emergency service in Durres hospital and about demographic data. To the question about how satisfy patients were from the health service they answered on a 5-point scale where 1 was "not satisfied" and 5 "very satisfied" with health care service. The collected data were processed by SPSS statistical software. Data were represented as mean and percentage.

Results

From 200 patients that completed the questionnaire, 64% were women and 33% were men. The mean age was 37.2 ± 13.2 years old.

Gender	Nr	%
Male	72	36
Female	128	64
Total	200	100
Mean age \pm SD		37.2 ± 13.2
Education	Nr	%
Higher education	96	48
Secondary education	51	26
Elementary education	37	18
No education	16	8
Total	200	100
Living		
Rural	114	57
Urban	86	43
Total	200	100

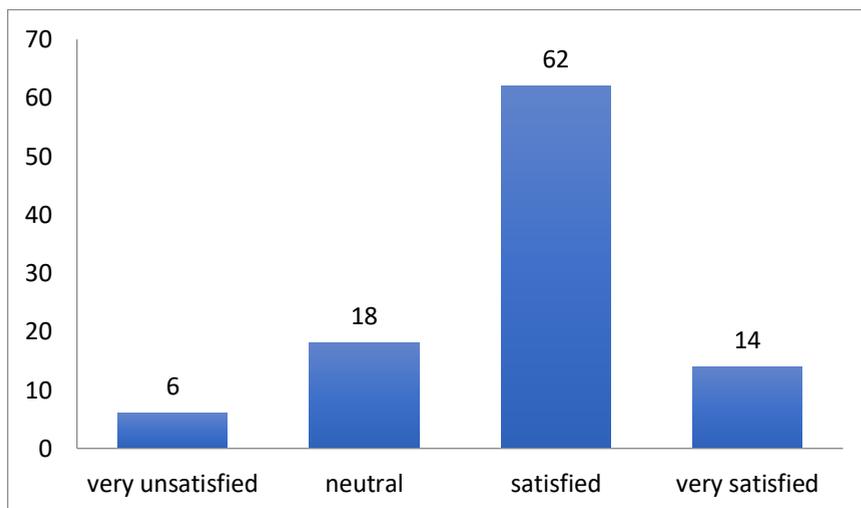
Table 1. Demographic data of patients who received emergency assistance

From table 1 we can see that 48% of patients had higher education and 8 % had no education. 57% of them responded that live in rural place and all of them received hospital emergency assistance.

Waiting time in emergency service	Nr (%)
Up to 30 min	24 (12%)
Up to 45 min	98 (49%)
Up to 60 min	41 (21%)
Up to 90 min	37 (18%)

Table 2. Waiting time in emergency service

From table 2 we have represented the waiting time for the service in emergency room in Durres hospital. As we can see 49% of patients reported that they had to wait up to 45 minutes to get health care service in emergency room.



Graph. 1. Patients satisfied from emergency service.

In graphic 1 it is represented patients satisfaction with emergency care service in Durres hospital. As we can see 62% of them answered that they were satisfied with emergency service and only 6% answered very unsatisfied.

Discussion and Conclusions:

As many study reported that their health care system was affected from covid 19 (7), (8), (9); even in our study Covid-19 has affected the health care system in Albania. As we can see from our study the time of waiting in the emergency room was up to 45 minute in 49% of the patients.

Regarding patients satisfaction during covid-19, 62% of the respondents were satisfied with the service received, and that the degree of dissatisfactions on the rest

of the patients was mainly related to the large number of patients hospitalized at the same time, which created uncertainty among patients, about the service received and the fear to neglect. Other studies have reported patients satisfaction about health care system during pandemic period, where they reported a decrease of patients satisfaction (10), (11).

Preparing staff to deal with such critical situations is a must, as a good proportion of patients often perceived the insecurity of physicians and nurses in providing first aid. The overall opinions about the satisfaction level of patients for the availability and empathy of doctors in the hospital were good.

As a conclusion we can say that there is a strong positive relationship between patients satisfaction and the promptness in the service as well as the necessary spaces for the treatment of patients.

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Musical Preferences of Students in Croatia and Bosnia and Herzegovina

Snježana Dobrota

Faculty of Humanities and Social Sciences

University of Split, Croatia

Martina Glavaš

Master of Primary Education

Dubravka Čubrić

Master of Primary Education

Abstract

Musical preferences are an extremely complex phenomenon formed under the influence of many factors. The paper investigates whether there are gender- and age-related differences in the preferences of primary school students from Croatia and Bosnia and Herzegovina and whether there is a connection between music familiarity and preferences for certain musical excerpts. To examine students' preferences for musical excerpts, a general data questionnaire and an assessment scale were administered to a sample of 253 participants, including second, third, seventh, and eighth grade primary school students from Croatia and Bosnia and Herzegovina. The results show gender- and age-related differences in the preferences for classical music, whereby female students, compared to male students, and younger students, compared to older students, show higher preferences for classical music. A significant interaction effect of gender and age on classical music preferences was found. Furthermore, the results show that male and female students do not differ in their preferences for world music, while age-related difference was observed, with younger students, compared to older students, showing greater preferences for this musical style. A significant interaction effect of gender and age on world music preferences was found. Finally, it was confirmed that students show higher preferences for familiar musical excerpts compared to unfamiliar musical excerpts. The obtained results represent a significant contribution to the study of musical preferences from the aspect of music psychology and music pedagogy.

Keywords: music pedagogy, musical preferences, world music, classical music, music education.

INTRODUCTION

The goal of teaching music at all levels of education is the aesthetic education of students, cultivating a love of music, and acquiring the basic elements of musical language. From 2006 to 2019, music education in primary schools in Croatia was organized on the basis of a document entitled *Curriculum for Primary School* (2006). Conception-wise, this was an open program, which means that listening to and becoming familiar with music was the only mandatory area, while the teacher was free to choose the way of active music-making, including singing, playing, and elements of musical creativity. The openness of the program was especially seen in the teaching unit *Folk Music*, where the teachers could choose in which order they would teach lessons respecting the principle of the homeland. The program relied on two basic principles. The psychological principle related to the assumption that students love music and want to actively engage with it, while the cultural-aesthetic principle was based on the idea that teaching music enables students to become competent users of music.

The year 2019 saw the adoption of a document entitled *Curriculum for the School Subject of Music for Primary Schools and Grammar Schools in the Republic of Croatia* (2019), which was a result of the curricular reform. Unlike the 2006 Curriculum, which covered only primary school, this program covered both primary and secondary school. Furthermore, as opposed to musical activities listed in the 2006 Curriculum (singing, playing, listening to music, elements of musical creativity), the 2019 Curriculum introduced three domains: (A) listening to and becoming familiar with music, (B) expression through music and with music, and (C) music in context. While the 2006 Curriculum lists key concepts and educational achievements, the 2019 Curriculum provides a list of educational outcomes that are realized within each domain. According to the document, music education is based on the following principles: psychological principle, cultural-aesthetic principle, synchronicity principle, and intercultural principle.

There are ten cantons/counties in the Federation of Bosnia and Herzegovina entity, each one having its own curriculum. According to the *Curriculum for the Nine-Year Primary Schools in the Croatian Language in Bosnia and Herzegovina* (2008), music education takes place within the school subject of Music Culture. Here, too, the basic principle is the psychological one, according to which students love music and want to actively engage with it. Furthermore, the program is open, which means that the teacher has the freedom to conduct lessons according to the abilities and desires of students, while the main emphasis is placed on the cultural aspects of music. The aim of teaching music in primary school is to introduce students to music culture, learn the basic elements of musical language, develop musical creativity, promote general values of community and cooperation, promote a sense of beauty, respect diversity, develop a sense of belonging to the homeland, encourage the expression of emotions, and learn how to distinguish trendy music from permanently valuable classical

works. The tasks of teaching music are getting acquainted with different pieces of music, getting acquainted with the basic elements of musical language, encouraging independent musical activities, and developing musical taste. Teaching areas, key concepts, educational achievements, and proposals for choosing teaching methodology are listed for each grade.

Dobrota and Reić Ercegovac (2016a) point out that the ability to aesthetically evaluate music represents a sensitivity to the artistic quality of the work and its performance. Musical preferences are short-term assessments of liking, while the musical taste presents a relatively stable, long-term behavior and evaluation, or more permanent dispositions that represent the totality of individual preferences (Mirković-Radoš, 1996). The results of many studies confirm that musical preferences are an extremely complex phenomenon, formed under the influence of various factors (Dobrota et al., 2019; Esfandiari & Mansouri, 2014). These factors can be categorized into two groups: music-related characteristics, such as tempo, dynamics, performers, musical style, etc., and listener-related characteristics, such as gender, age, music education, personality traits, etc.

The results of research on gender-related differences in musical preferences generally confirm that women prefer romantic music, with a high level of emotional content, while men are more prone to complex, heavy styles (Esfandiari & Mansouri, 2014). According to research by Crowther and Durkin (1982), women listen to music more intensely and more often than men. Such a discrepancy is associated with differences in the ways men and women use music (North & Hargreaves, 2008). Namely, it is often pointed out that the importance of music for men lies in its role in the social and affective relationships they establish with peers and society, while women listen to music to improve their mood and express their thoughts and feelings. In their research on the musical preferences and functions of music on a sample of Slovenian and Croatian students, Dobrota et al. (2019) confirm there are gender differences in both variables, with women preferring the Reflective-Complex musical style and men the Intense-Rebellious style of music.

As for the relationship between musical preferences and age, the results of the research confirm that children of early and preschool age and lower primary school students are extremely open and flexible toward different, unconventional musical styles. Such a phenomenon in music pedagogy and music psychology is known as the open-earedness hypothesis (Hargreaves, 1982). LeBlanc (1991) defines this hypothesis in terms of listeners' tolerance of different musical styles and proposes four hypotheses: (1) younger children are more open to different music; (2) openness decreases with entering adolescence; (3) there is a partial switch in terms of openness as the listener matures from adolescence to younger adulthood; (4) openness declines as the listener matures and enters old age (LeBlanc, 1991, 2). LeBlanc et al. (1993) tested these hypotheses on participants aged 6 to 91 years, and his results

indicate a decline in adolescent preferences, a rise of preferences toward adulthood, and finally a decline in older age.

Another variable that represents a significant predictor of musical preferences is music familiarity (Dobrota & Reić Ercegovac, 2016b; North & Hargreaves, 2008). While popular, less complex music initially attracts more attention from the listener, the attention decreases with the increasing music familiarity. In contrast, more complex types of music, such as classical music, require multiple, active listening if we want to perceive such music, understand it and, consequently, increase the preferences for such music.

RESEARCH OBJECTIVE, PROBLEM, AND HYPOTHESES

The research objective is to investigate whether there are gender- and age-related differences in the preferences of primary school students for classical music and world music and whether there is a connection between music familiarity and musical preferences.

Based on the defined objective, the following hypotheses were formulated:

H1: Younger students, compared to older students, and girls, compared to boys, show greater preferences for classical music.

H2: Younger students, compared to older students, and girls, compared to boys, show greater preferences for world music.

H3: Students show greater preferences for familiar music compared to music they are unfamiliar with.

METHOD

Participants

The survey was conducted on a sample of 253 participants, including third, fourth, seventh, and eighth grade students of Spinut Primary School (Split, Croatia) (N = 75), Antun Branko Šimić Primary School (Zagreb, Croatia) (N = 70), and Antun Branko and Stanislav Šimić Primary School (Drinovci, Bosnia and Herzegovina) (N = 108) (Table 1). Third and fourth grade students were put into one group, and seventh and eighth grade students into another group of participants. Out of the total number of participants, only 13% attended or are attending additional music lessons, and 25% of participants engage with music in their free time.

Table 1. Sample structure (N =253)

GENDER	N	GRADE	N
M	119	3	36
		4	31
		7	33
		8	19
F	134	3	34
		4	35
		7	42
		8	23
Total	253		

Research instrument and procedure

A questionnaire was constructed for the purpose of this research. In the first part, the *General Data Questionnaire*, socio-demographic data on participants were collected (gender, primary school, grade, additional music lessons, engagement with music in free time). The second part is the *Musical Preferences Questionnaire*. The task of the participants was to listen to a particular piece of music, indicate whether they liked the piece on the Likert-type scale by marking the numbers from one to five (1 = I don't like it at all; 5 = I really like it), and indicate whether they were familiar with the piece of music.

A compact disc containing five instrumental excerpts of classical music and five instrumental excerpts of world music, each lasting about one minute, was used in the research. The CD was made exclusively for the purposes of this research, and the criteria for the selection of musical excerpts were the research problems. The psychometric characteristics of the questionnaire are shown in Table 2. Since the distribution of total scores of preferences for musical excerpts differs significantly from the normal distribution (K-S $d=0.06$; $p>0.05$), non-parametric statistical procedures will be used in further analyzes.

Table 2. Psychometric features of the Musical Preferences Questionnaire

No. of musical excerpt	Musical excerpt – classical music	Musical excerpt – world music
1.	G. Rossini: <i>William Tell</i> (overture)	<i>The music of Ireland: Jigs and reels</i> (Ireland)
2.	J. Brahms: <i>Hungarian Dance no. 5, g-minor</i>	<i>Greek Music Bouzouki Instrumental “Summer Time”</i> (Greece)
3.	G. Bizet: <i>Carmen</i> (overture)	<i>Kalinka</i> (Russia)
4.	P. I. Tchaikovsky: <i>Nutcracker, Trepak</i>	<i>A Girl from Kumanovo – Traditional Instrumental Macedonian Music</i> (Macedonia)
5.	A. Khachaturian: <i>Gayaneh, Saber Dance</i>	<i>The Mexican Hat Dance</i> (Mexico)
Cronbach α	0.69	0.54
M (sd)	20.96 (3,21)	19.72 (3.21)
range	11-25	9-25
average r value among items	0.30	0.19
K-S d	0.14, p<0.01	0.11, p<0.01

Table 3 shows the average degree of preferences for musical excerpts. The participants rated the composition A. Khachaturian: *Gayaneh* with the highest marks and the composition *Kalinka* (Russia) with the lowest.

Table 3. The average degree of preferences for musical excerpts

Musical excerpt	<i>M</i>	<i>min.</i>	<i>max.</i>	<i>SD</i>
G. Rossini: <i>William Tell</i> (overture)	3.88	1.00	5.00	0.98
<i>The music of Ireland: Jigs and reels</i> (Ireland)	3.93	1.00	5.00	1.08
<i>Greek Music Bouzouki Instrumental "Summer Time"</i> (Greece)	3.77	1.00	5.00	1.04
J. Brahms: <i>Hungarian Dance no. 5, g-minor</i>	3.96	1.00	5.00	1.15
G. Bizet: <i>Carmen</i> (overture)	4.40	1.00	5.00	0.81
<i>Kalinka</i> (Russia)	3.76	1.00	5.00	1.16
P. I. Tchaikovsky: <i>Nutcracker, Trepak</i>	4.28	1.00	5.00	0.91
A Girl from Kumanovo - <i>Traditional Instrumental Macedonian Music</i> (Macedonia)	3.87	1.00	5.00	1.22
<i>The Mexican Hat Dance</i> (Mexico)	4.39	1.00	5.00	0.89
A. Khachaturian: <i>Gayaneh, Saber Dance</i>	4.45	1.00	5.00	0.92

RESULTS

H1: Younger students, compared to older students, and girls, compared to boys, show greater preferences for classical music.

To investigate whether there are age- and gender-related differences in students' classical music preferences, a two-way analysis of variance was performed. The results show age- and gender-related differences in the preferences for classical music, with girls, compared to boys, and younger students, compared to older students, showing higher preferences for classical music (Table 4). This confirmed the hypothesis. A significant interaction effect of gender and age on the musical

preferences of classical music was found, in such a way that a much greater difference was observed between younger and older boys than between younger and older girls.

Table 4. Gender- and age-related differences in students' preferences for classical music

Preferences for classical music		M	N	F	df	p
gender	boys	4.04	119	10.55	1.249	0.00
	girls	4.28	134			
grade	grades 3 and 4	4.43	136	54.12	1.249	0.00
	grades 7 and 8	3.89	117			
Interaction gender*grade	boys in grades 3 and 4	4.41	67	7.46	1.249	0.00
	girls in grades 3 and 4	4.45	69			
	boys in grades 7 and 8	3.68	52			
	girls in grades 7 and 8	4.11	65			

H2: Younger students, compared to older students, and girls, compared to boys, show greater preferences for world music.

To investigate whether there are age- and gender-related differences in students' preferences for world music, a two-way analysis of variance was again performed. The results show that boys and girls do not differ in preferences for world music, while there is age-related difference, with younger students, compared to older students, showing greater preferences for this musical style (Table 5). This partially confirmed the hypothesis. A significant interaction effect of gender and age on the preferences for world music was found. In the case of younger students, boys show greater preferences for world music than girls, while in the case of older students, girls prefer this musical style more than boys.

Table 5. Age- and gender-related differences in students’ preferences for world music

Preferences for world music		M	N	F	df	p
gender	boys	3.90	119	0.43	1. 249	0.51
	girls	3.95	134			
grade	grades 3 and 4	4.14	136	30.88	1. 249	0.00
	grades 7 and 8	3.71	117			
Interaction gender*grade	boys in grades 3 and 4	4.20	67	5.39	1. 249	0.02
	girls in grades 3 and 4	4.07	69			
	boys in grades 7 and 8	3.60	52			
	girls in grades 7 and 8	3.82	65			

H3: Students show greater preferences for familiar music compared to music they are unfamiliar with.

To determine whether music familiarity affects students’ preferences for musical excerpts, correlations between familiarity and musical preferences were calculated (Table 6). The existence of such correlations was observed for nine musical excerpts, thus confirming the last hypothesis.

Table 6. Correlations between music familiarity and musical preferences

Musical excerpt	Unfamiliar (f)	Familiar (f)	Correlation between liking and familiarity
G. Rossini: <i>William Tell</i> (overture)	127	126	0.12
<i>The music of Ireland: Jigs and reels</i> (Ireland)	189	64	0.20*
<i>Greek Music Bouzouki Instrumental "Summer Time"</i> (Greece)	166	87	0.28*
J. Brahms: <i>Hungarian Dance no. 5, g-minor</i>	125	128	0.25*
G. Bizet: <i>Carmen</i> (overture)	51	202	0.17*
<i>Kalinka</i> (Russia)	145	108	0.18*
P. I. Tchaikovsky: <i>Nutcracker, Trepak</i>	52	201	0.21*
A Girl from Kumanovo - <i>Traditional Instrumental Macedonian Music</i> (Macedonia)	154	99	0.30*
<i>The Mexican Hat Dance</i> (Mexico)	48	205	0.26*
A. Khachaturian: <i>Gayaneh, Saber Dance</i>	20	233	0,35*

*p < 0,05

DISCUSSION

The results of this research confirmed there are age-related differences in the preferences for classical music and world music, whereby younger students, compared to older students, show greater preferences for both musical styles. Such results are consistent with the results of many studies confirming that younger children are more open to different, unconventional musical styles (Dobrota & Srajačev, 2021; Hargreaves et al., 1995; Kopiez & Lehmann, 2008). Kopiez and Lehmann (2008) investigated musical preferences of first, second, third, and fourth grade students and noticed a decline in openness to unconventional musical styles (classical, ethnic, avant-garde music) when transitioning from first to second grade.

However, such an effect disappeared when classical music was excluded from further analysis. Hargreaves (1995) investigated the influence of age, gender, and music education on the preferences for different musical styles of participants aged 11–12 and 15–16 years. He noticed a decline in the level of musical preferences with age, especially in the case of art music.

Louven (2012) believes that the concepts of musical preference and openness are not synonymous, because one can show low preferences for a particular piece of music, but at the same time be open to it. Investigating the trend of developing openness in a sample of high school and university students, he confirms the significant influence of age and music education on the formation of musical preferences. Still, he notes that openness to different music is a relatively stable category. Therefore, he views this category as openness to new experiences. i.e. as a personality trait from the five-factor personality model (Big Five theory of personality).

Regarding the influence of gender on the preferences for classical music, it was noticed that girls, compared to boys, show higher preferences for classical music, while in the case of world music there was no gender-related difference in the preferences. The results of research generally confirm that women, compared to men, show preferences for a larger number of musical styles, which is explained by the fact that female students have better music education than male students (Hargreaves et al., 1995). Exploring the musical preferences of primary school students for classical music, world music, and 20th-century music, Dobrota and Sarajčev (2001) also find no gender-related differences in the preferences for world music. A possible explanation for such a finding is that students, regardless of gender, were not often in contact with world music and therefore were not able to get familiar with such music. Exploring the influence of age, gender, and music education on musical preferences, Hargreaves (1995) notices that female students show preferences for a greater number of musical styles than male students, especially in the case of art music.

In this research, a significant interaction effect of gender and age on the preferences for classical music was observed, in such a way that a much greater difference between younger and older students was observed in boys than in girls. The interaction effect of gender and age on the musical preferences for world music is also significant, whereby younger boys show greater preferences for world music than younger girls, while older girls prefer this musical style.

The results of this research confirmed that music familiarity is a significant predictor of preferences for classical music and world music. This is in line with the results of many studies which show that getting to know and repeatedly, actively listening to music, especially the music of more complex structure, increases the preferences for such music (Dobrota & Sarajčev, 2021; Ward et al., 2014).

CONCLUSION

The results of this research have significant implications for music pedagogy and music psychology. One of the most significant results relates to the fact that younger children are open to different music, even the music that adults consider unconventional.

Openness to unknown experiences is generally a fundamental premise of understanding human behavior. If such knowledge is considered in the context of music pedagogy and music psychology, we can notice that understanding the course and dynamics of the development of the aesthetic response to music is a very important factor influencing the design of music classes.

For music pedagogues, the fact that children are open to different music specifically means that teaching content they present to children can be enriched with different music, which, in addition to art music, includes popular music, world music, and traditional music of the region children come from. When children become familiar with different types of music, they become aware that pieces of music differ both in their structure and in the function that they have in society and yet they have equal aesthetic values and high quality. This develops tolerance and reduces exclusivity in children, not only in the field of choice of music and other artistic content but also in their relationships with peers and members of different cultures, if they come into contact with them. Such intercultural music education is a response to contemporary life in all its complexity.

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Phyto antitussive medicines affect the cough treatment for Covid-19's children's patients

Kleva Shpati

Pharmacy Department, Faculty of Medical Science, Albanian University

Abstract

Introductions: Cough was one of the most troubling symptoms for Covid-19 s patients treated at home. Pandemic years of Covid-19 brought a novel approach to the use of medicinal plants. Cough is not only distressing to patients, but also increases the risk of community transmission by respiratory droplets. Stigmatization of patients with cough can occur, leading to social isolation, particularly during the infections with covid-19. Identifying ways to control Covid -19-associated cough could help to prevent community transmission and disease spread, as well as removing the stigma of this symptom. The aim of our survey was to know the cough treatments with Covid-19 children patients treated home with simple and moderate symptoms. The behaviors of pharmacist and doctors' community for treating these symptoms with Phyto preparations. This is a survey study conducted in open big ten network pharmacy of Tirana and to the 3 main ambulatory clinics of during of Tirana during the pandemic year 2021 for the period October - December 2021. We collected information concerning the use of antitussive medicine s in this period from a questionnaire distributed to pharmacist and doctors which consisting open and closed questions. The biostatistical expert suggested to includes a combination of original question containing both the qualitative and quantitative data to the questionnaire. Data received from the questionnaire had two type of questions 1) multiple choice and 2) open questions. Results shown that antitussive medicinal plants were preferred compare with other alternatives. Mostly of the patients used in the wrong way in terms of frequency and durations. From the total 240 patients only 195 (81.25%) has given corrects to the pharmacists or have completed all the questions. From all the plants althea officinalis was the most used with 66% followed, by thymes vulgaris 29% the rest where different medicinal plants. In conclusions is necessary knowledge to orients pediatrician for the right use of Phyto medicine. Plants Althea officinalis, Thymus Vulgaris can demonstrate the same efficacy compare with synthetic antitussive medicine, but less side effects. They must be well known through educations program. Side effects of medicinal Herbs are lower, and they may be used with their proper efficacy that they have and can use longer than synthetic ones.

Keywords: Dry Cough, Antitussive Plant, Symptoms, Efficacy, Safety

INTRODUCTION

COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has influenced global health since its discovery in Wuhan, China. Cough is one of the most common presenting symptoms of COVID-19, along with fever and loss of taste and smell. Cough can persist for weeks or months after SARS-CoV-2 infection the post-COVID syndrome or long COVID [Guan WJ, 2019, Grant MC, 2020, Canning BJ, 2020]. The pathways of neurotropism, neuroinflammation, and neuroimmunomodulation through the vagal sensory nerves, which are implicated in SARS-CoV-2 infection, lead to a cough hypersensitivity state. The post-COVID syndrome might also result from neuroinflammatory. The mechanisms of acute and chronic COVID-19-associated cough and post-COVID syndrome, consider potential ways to reduce the effect of COVID-19 by controlling cough, and suggest future directions for research and clinical practice.

Cough is not only distressing to patients, but also increases the risk of community transmission by respiratory droplets. Stigmatization of patients with cough can occur, leading to social isolation, particularly during the COVID-19 pandemic. Identifying ways to control COVID-19-associated cough could help to prevent community transmission and disease spread, as well as removing the stigma of this symptom [Goërtz YM]. 2020, BHP, 1996, EurPharmac. 1996]

Radix Althaea consists of the dried roots of *Althaea officinalis* L. (Malvaceae) used for pharmacological effects. The major chemical constituents of mucilage content ranges from 10 to 20% a mixture of acidic

galacturonorhamnans, neutral glucans and neutral arabinogalactans In pharmacopeias and in traditions systems is consider a as a demulcent for symptomatic treatment of dry irritable coughs and irritations

of oral and pharyngeal mucosa and other indications. Also it is used in cough mix. *In pharmacology* the demulcent effects of Radix Althaea are due to its high content of polysaccharide [EuePharmac, 1996, Farmacopea Polska V, 1995] hydrocolloids, which form a protective coating on the oral and pharyngeal mucosa, soothing local irritation and inflammation (*Althea officinalis* has an Anti-inflammatory activity thanks to A polysaccharide fraction (500mg/ml) isolated from a root extract had anticomplement activity in human serum in vitro

Aqueous extracts of the roots stimulated phagocytosis, and the release of oxygen radicals and leukotrienes from human neutrophils in vitro The aqueous extract also induced the release of cytokines, interleukin-6 and tumor necrosis factor from human monocytes in vitro, thereby exhibiting anti-inflammatory and immunostimulant activity [Farmacopea Polska V, 1995]

MATERIALS AND METHODS

Study design, participants. The study was based on a survey in Pharmacies of Tirana in post covid -10 patients suffering the symptoms of Covid -19's children patients treated at home. This is a retrospective study conducted in open 10 network pharmacy of Tirana during the pandemic year 2021. We collected information concerning the use of antitussive medicines in this period from a questionnaire distributed to pharmacist which consisting in ten questions dedicated for pediatric uses as antitussive medicine from herbal and synthetic ones We assessed ten pharmacies. the study population comprised pharmacist completing a 15-minute paper -based survey with a minimum 10 individuals per week for the Period October-December 2021 (12 weeks), in total 240 individuals. This study includes individuals following inclusion and exclusion criteria

Inclusion criteria-

Cough dry with Covid -19's children's patients up to 14 years old

Cough dry treatments with Covid -19 children's patients with simple and moderate symptoms

Exclusion criteria

Patients that dismiss the treatment

Patients that did not reach adherence

2.1 Survey questionnaire

The participating pharmacist must complete the questionnaire We assessed ten pharmacies. the study population comprised pharmacist completing a 15-minute paper -based survey with a minimum ten individuals per week for the Period March-June 2021 (12 weeks), in total 240 individuals.

The questionnaire includes a combination of original question containing both the qualitative and quantitative data. The questionnaire was controlled by the biostatistical expert which recommend us to make two type of questions 1) multiple choice and 2) open questions.

From the total 240 individuals (parents) only 195 (81.25%) has complete the questionnaire in all questions and in time. The questionnaires were distributed by hand and received the feedback the day after. English version is written below

Questionnaire

Question 1: Gender

Question 2: Age

Question 3: Is dry cough your most disturbing symptom?

Question 4: What medications are you taking at the same time?

Question 5: Do you use herbal medicines for cough or what doctor has described?

Question 6: Do you prefer herbal or synthetic medicines for cough (OTC)?

Question 7: Which of the following medicinal herbs would you choose for your cough?

Salvia Officinalis

Laurus Nobilis

Althaea Officinalis

Plantago

Thymus Vulgaris

Question 8: Have you heard of profit or side effects of medicinal plants?

Question 9 Why you prefer herbal medicine for cough?

Question 10: Do you agree do give this medicinal herb tea for all individuals not only for children

Statistical analyses were done with SPSS 25. Descriptive statistic and frequency were two variables. Description questions were used for qualitative data. Closed questions are considering a simple descriptive statistic included frequency and distributions.

RESULTS AND DISCUSSION

From the total 240 patients only 195 (81.25%) has complete the questionnaire. Participants has completed all the question despite been correct or not. Our participants in total were 195 were 125 were females (64%) and 70 were male (36%). The data shown in Table 1.

Table 1. Baseline characteristics:

	Number	%
<i>Gender</i>		
Male	70	36 %
Female	125	64%
<i>Covid-19 status</i>		
Post Covid -19 patients cough continue	136	69.49 %

Covid patients treated home	60	30.51 %
Age		
1-5 years	78	39.74%
5-10 years	37	18.67%
10-14 years	81	41.59%

All the participants (100%) have dry cough symptoms, where 82% dry cough and 8% wet cough 10% mix cough. Their cough was caused SARS COV-2 and 68% were post Covid-19 status. Their dry cough is over 2 weeks and they have been treated earlier with the other drug. All agreed to take the Phyto medicine for caught treatment. Children 's parents accepted herbal treatments as well old patients. The results were 57.55% considered successful while 42.45% have continued the co-treatment with another medicine. All patients accepted the use of medicinal herbs for pediatric and elderly age groups, with younger ones being skeptical of their effectiveness. Only 2.45% of them admitted that medicinal herbs had side effects, while all the others admitted only their effectiveness. From all the medicinal plants *Althea officinalis* was the most used with 66% followed, by *Thymus vulgaris* 29% the rest where different medicinal plants .

Althaea officinalis L. (Malvaceae) is an indigenous to western Asia and Europe medicinal plant . Major chemical constituents of *Radix Althea* content ranges from 10 to 20% and consists of a mixture of acidic galacturonorhamnans, neutral glucans and neutral arabinogalactans . *R. Althea* is used as a demulcent for symptomatic treatment of dry irritable coughs and irritations of oral and pharyngeal mucosa . The demulcent effects of *Radix Althaea* are due to its high content of polysaccharide hydrocolloids, which form a protective coating on the oral and pharyngeal mucosa, soothing local irritation, and inflammation.

Antitussive activity is known for *R. Althea*, when intragastric administration of a polysaccharide fraction, isolated from an aqueous root extract suppressed the intensity and the frequency of coughs induced by mechanical irritation of laryngopharyngeal and tracheobronchial mucosa The antitussive activity of this polysaccharide fraction (50 mg/kg body weight) was as effective as *Syrupus Althaeae* (1.0g/kg body weight), and more effective than *prenoxdiazine* (30 mg/kg body weight) (Nosal'ova G, 1992).

Althea officinalis cause a weak inhibition of mucociliary transport in isolated, ciliated epithelium of the frog esophagus was demonstrated after treatment of the isolated tissues with 200 ml of an aqueous root macerate (6.4 g/140 ml) . There have been

great advances in our understanding of the pathways underlying cough and cough hypersensitivity [WHO monographs, 2006]. Cough is a reflex that requires minimum conscious control, occurring through the activation of peripheral sensory nerves into the vagus nerves, which provide input to the brainstem at the solitary nucleus and the spinal trigeminal nucleus [Trease and Evans, 2009, WHO, 1998, WHO,1997]. The neurotropism of SARS-CoV-2 could explain the other accompanying symptoms of COVID-19 and post-COVID syndrome[Dhand R, 2020, Bisset NG, 2019, Menni C, 2020]

CONCLUSIONS

The uses for a long time for treating dry cough caused by Covid -19 children patients results more beneficial compare to other synthetic medicine for cough treatment. The population by the traditional is oriented more and more to medicinal plant, but the all the providers have to trust more and more.

It is necessary knowledge to orients individuals for the right use of medicinal herbal with antitussive effect that *Althea Officinalis* can demonstrate especially when they are for use for a long period of time.

RECOMANDATIONS

Treating the acute and chronic cough of COVID-19 is based on available treatments and guidelines, but intensification on using medicinal plants can give more benefits and less side effect.

The educations program for developing knowledge on medicinal plant and for dry cough treatments need to be more and more efficient.

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Analysis of Ismail Kadare Prose Prospects Under the Optics of V. L. Propp

Dhurata Lamcja

PhD, European Scientific Institute

Abstract

When it comes to Albanian and Balkan literature, Ismail Kadare is undoubtedly one of the figures of the greatest importance for the development of modern literature, while reviving the elements of folklore lost in the empty communist literature. Kadare's work matters beyond the technical elements, the use of words, flow, and themes, for the important role he played with his silent attempt to reawaken the hope for freedom, through the hidden literary figures in his work. On the other hand, his contribution to literature comes as a result of his mastery to bring a new and modern spirit to literature, using motifs and figures used for centuries in Albanian folklore but wrapped in stories and characters of placed at different times from popular literature. Certainly, the inclusion of folkloric elements such as the taking of motifs and themes from old Albanian tales and legends leaves room to suggest the analysis of his work under the optics of Propp analysis, as a novelty in the analysis of the work of Balkan authors that share features similar to Kadare.

Keywords: *poetics, literature, Propp analysis, Ismail Kadare, communist literature*

INTRODUCTION

BACKGROUND OF THE WRITER AND HIS WORK

Kadare is also a well-known author in the international arena. At the suggestion of the well-known author and critic Robert Escarp, the publishing house "Albin Michel" published in 1970 the work "The General of the Dead Army". On this date, Kadare's work transcended the borders of his country. Kadare soon stood dignified among writers, journalists, and readers in France. He was the synonym of the whole country: "*An Albanian which sums up the whole of Albania*".¹

So far, Kadare's work includes 13 novels, about 10 short stories, eight lyrical collections, etc. Despite the variety of themes and ideas in more than three decades of experience, Kadare's work can be identified with some points or motives that help

¹Note: Escarpit in the preface of Kadare, I. "Le General de l'armée morte", Paris, 1970.

sketch his literary portrait (Tomková, 2005), such as the history of Albania, national resistance, the socio-political actuality of the country, Empire Ottoman as a model of the totalitarian state, the world in the mirror of memories, mythology in the structure of the work (Klosi, 1991). The boundaries of this classification are often fluent. Given the reality and mainly the historical facts of the work "The General of the Dead Army", the latter focuses more on symbolism than on an accurate reflection of history. The novels and stories of the third group, on the other hand, seem to have a historical nature, however, they constitute a free entry into history, with a current literary background. Fictional "facts" prevail over history. Autobiographical prose is easier to analyze through occasional themes. Mythology is examined in the novel "Who brought Doruntina?". The work is also based on the motive of the construction sacrifice in the work "Bridge with three arches".

The presentation of Kadare's work, although more detailed than other Albanian authors, does not claim to be exhaustive. In addition to addressing mythological themes, some important novels such as "The Great Winter," "The Concert at the End of Winter," or "Last November" are mostly political novels (Xhaferi, 2017). Kadare's work contains several poems that concisely identify the constellations of ideas in future prose texts. and can serve as epigrams for these texts. The division between Kadare as a prose writer and Kadare as a lyric poet may not be applicable (Morgan, 2006).

Analyzing Kadare's work, this paper, beyond the traditional literary analysis, will be based on Propp structural analysis, which will serve to see the impact of fairy tales and typological structures of folklore on Kadare's work, developed in the era of modernist literature. and socialist realism.

This paper has a number of goals, which can be more easily synthesized in selected research questions, which will try to answer the set goals of the study:

Is the influence of modernist literature and socialist realism felt in Kadare's work?

Is the impact of the revival of folklore literary elements felt in Kadare's work?

Can we say that there are a considerable number of Propp functions present in Kadare's work?

THE AUTHORS BIOGRAPHY AND ITS IMPACT ON THE AUTHORS WORK

Ismail Kadare's work has only been translated in the last two decades. He was born in Gjirokastra in 1936. During the Second World War, the child was in his hometown, where the Italian and Greek armies passed and was later occupied by the German army. The autobiography of that time can be found in the novel "Chronicle in Stone" of 1971 (Elsie, 2005).

After the war, Kadare attended primary and secondary school in the city of Gjirokastra. He started writing and publishing poetry very early on (such as the

subject of his satire in the later story "Writing Time", 1985). He enrolled at the University of Tirana, in the branch of Albanian Language and Literature. In 1954 he published his first poetry collection, "Youth Inspiration". Three years later he published his second poetic collection entitled "Dreams". Later, however, he departed from his early poetry (Avdyli, 2019a).

After completing his studies in Tirana, Kadare continued his artistic education at the Gorky Institute in Moscow. Here he came in contact with contemporary or modern European literature. With the breakdown of relations between the Soviet Union and Albania in 1961, Kadare had to drop out of school and return to Tirana. He initially worked as a journalist and editor for the country's contemporary literary writings. In 1963 he achieved success with the novel "The General of the Dead Army". Given the philosophical approach, the young author was recognized as an important innovator in Albanian literature. Also, the above novel sparked controversy, which many consider a sign of the novel's great importance.

However, in the 1960s in Albania, Kadare was largely known as a successful poet. His collections "My Century", 1964, "Eagles fly high", 1966, "Solar engine", 1968, etc. were characterized by enthusiasm for socialism, abstractions, and "*entanglements*", which were very popular among young people at the time. The poetic collection "Time" published in 1976 marked his farewell to the genre of poetry (Avdyli, 2019b). This collection contained political poetry, so it focused on Albania's path to communism (Gjergji, 2015). "The Castle" and "Chronicle in Stone" were written after "The General of the Dead Army", and are considered some of Kadare's most important works in the 1960s.

From the early 1970s to 1990, Kadare lived as a freelance writer in Tirana and was a board member of the Writers' League. In 1988 Kadare was elected Vice President of the Democratic Union of Albania. He was also the editor-in-chief of the literary magazine published in French "Les Lettres Albanaises". In the late 1990s, Kadare left with his family in France and thus distanced himself from his party and Albanian politics.

The new situation in Eastern Europe and Albania positioned Kadare as a prominent Albanian writer and at the same time as the advocate of democratization of the country in a new light. As a prose writer, Kadare was particularly productive in the 1970s. In 1973 he published *The Winter of Great Solitude* (1976 expanded as *The Great Winter*); in 1974 the other novel "November of a Capital"; in 1976 "The Former Emblem", a collection of short stories and longer prose texts; in 1978 three novels in one volume, among them "The Bridge with Three Arches", and "The Twilight of the Steppe Gods"; in 1979 two novels were published, "Who brought Doruntina?", "Broken April" and three separate novels in a group. Also published were the novel "File H", 1981, the prose collection "Writing Time", 1986, and "Concert at the End of Winter", 1988.

Kadare is also known as an essayist and translator. It is worth mentioning his contribution to the tradition of Albanian folk poetry "Autobiography of the Folk in Verses", 1975, and essays on Aeschylus, 1986 (published as a preface to his translation of "Orestia") and on the Albanian poet Migjeni, 1988.

METHODOLOGY

The methodology of this paper has been carefully selected based on the aims of this study. Beyond the collection of relevant data from Kadare's major prose works, the main research method for this study is that of Propp structural analysis.

To better understand the author's work it is worth applying the structuralist analysis of narrative theory by Vladimir Lakovlevich Propp. He published the famous work "Morphology of the Fairy Tale" (1928), which was an attempt to structure all Russian fairy tales and not only, in a similar structure. It is important to note that for Propp, morphology was not an end in itself and that he did not intend to describe poetic procedures in themselves, but to discover the specific form of folk tale as a genre, to find, consequently, a historical explanation for its uniformity.

In studying the specificity of the folk tale, V. Propp assumed that the diachronic (historical-genetic) study should be preceded by a rigorous synchronous description. With such a description, Propp set himself the task of highlighting the constant (immutable) elements, those that were always present in the folk tale and that the investigator does not forget, even when moving from one plot / function to another. Indeed, the invariances discovered by Propp, and the connections between them constitute the structure of the folk tale. Also, Propp discovered that character functions are constant and repetitive elements of folk tales. Thus, he divided the tales into sections.

Propp's morphology allows an almost accurate examination of the structural elements of the tale. This is what makes the value of the analysis approach extremely neutral. Therefore, Propp's morphology makes it impossible for a researcher to intervene without subjective or personal involvement that could interfere with the accuracy of the structural analysis. A value-neutral approach allows for an objective interpretation of the displacement or overlap of the scope of the work under analysis. On the other hand, a researcher who uses Propp methodology is focused on identifying functions and their findings are easily verifiable. Having objectively identified the functions, a Proppian interpretation of the tale enables a scholar to derive, almost without prejudice, those values and indications that the author has been willing to lay out. Namely, a set of functions defines the characters involved, which may indicate an important, didactic function of the popular literary heritage. Folk tales cannot be far from any idealization of human nature, as well as social relations between people, including close family members. On the contrary, as the

analysis of the author's prose itself will show, the analysis notices and designs in detail the imperfections of our culture and society.

"THE THREE-ARCHED BRIDGE" AND ITS *ETHNIC STRATA*

Ismail Kadare's work is an original literary universe, which combines classicism, modernity, antiquity, and contemporaneity. One of the peaks of Albanian literature is his work "Bridge with three arches". The bridge in Ismail Kadare's work "The Bridge with Three Arches" is a premonition, an omen, a threat. Towards the end of the 1300s, it climbs across a river in Albania, where the last remnants of Byzantine rule are giving way to the first Ottoman Turkish conquests. It is a bridge over which Asia would conquer Europe and the future would conquer the past.

In the parables of Kadare's history, the stones or the construction itself stand as a nightmare. "*All excellent construction work resembles crime and vice versa. . .*" murmurs one of the foreigners who is with the builders on the "Bridge with Three Arches." The enormous construction, in substance, was the offer of a ruler for immortality. Desperate, seeing nothing clearly, the medieval monk Gjon gives an account of the construction of the bridge over the river Ujana e Keqe.

Just a little more educated than his neighbors, the monk feels trouble. For Kadare, history is not knowledge, but disease, and Gjon falls ill with the premonition of an ominous planetary change. The Ottoman current that will eventually engulf the Balkans and most of Central Europe is affecting the divided territories of the Albanian high priests. The Turks already control half of the seaport in Vlora, in the south; soon they will control them all. Some of the Albanian lords have declared themselves vassals of the sultan; the Turkish governor across the river asked Mr. Gjon for his daughter's hand and was refused.

Weddings with foreigners have not been favorable. From the time when the Albanian prince Tanush Topia, the father of the great count, the current Karl Topia, kidnapped the French wedding guests of the daughter of the king of France, Helena Anzhuna, who were taking the bride to Byzantium, a black fate has followed many affinities on the land of the Albanians, at the time called Arbërs. Recently, more and more often, Turks are appearing in all parts of the Balkans. Crossing the river has always been done by dinghies, as the monopoly of a company known as "Boats and Rafts".

One day a stranger falls into a trance at the bank. A fortune teller interprets his ramblings as a prophecy that a bridge will be built. And very soon, representatives of another venture, "Bridges and Roads," arrive to convince the local lord to allow the construction of a toll bridge. John is called upon to do the interpretation but complains that it is easier to interpret for the woodpeckers. However, it is not just the sounds, but the future. Medieval Europe has emerged in the Renaissance, trade routes are flourishing, bridges are needed to enter Asian markets and suppliers. However, the bridges go in two directions, and what will reach the other side is a 600-year-old

empire. Builders set up camp, leveled the river banks, dug ravines to allow three piers to sink into the river bed. The villagers are divided. Some "rejoiced that Ujana e Keqe river would be implanted with a stone clasp"; others warn that "it was not easy to saddle a hitting mule."

Agents from the old dinghy company spread rumors that water spirits would get angry; very soon they would bring sabotage. Gjon records everything, agitated. He observes the sudden appearance of dervishes in neighboring Turkish lands. He reports on the arrival of the Turkish delegation holding the marriage proposal and rich gifts. "*Every invasion begins when your first set eye on it,*" John recalls being told by his father.

It was an enterprise, expansion, or progress that brought destruction according to Kadare's bitter look at history. A horror is associated with the project; an old legend returns to do the work of innovators. Legend has it that the three builders of a castle discovered that the work they did during the day was undone at night. The walls, it seems, required a soul in order to stay; a builder's wife was buried inside the masonry, one bay coming out to allow her children to milk. The situation of the bridge is described as follows:

"Ujana e Keqe was swollen and wrinkled even more but did not make any other attacks against the bridge. It flowed down her scorn as if nothing had happened. And indeed, to a foreigner, they were but a bridge and an ordinary river, like dozens of others, who from the time of the ashes had left the afterlife of the first time of cohabitation and, now, they had agreed on everything " (Kadare, 2011, p. 16).

However, the bridge was considered noble:

"I have built such ghosts," he said, and, pointing to the frothy-wrinkled waters of Ujana, over which, gloomily and unintentionally, the stone bridge was built, he added: and a bridge like this, even if washed with blood, it is a thousand times nobler than them. That was more or less my conversation with him " (Kadare, 2011, p. 27).

One morning Murrash, a bridge worker was found dead. Rumors abound: He volunteered for the reward; he was a saboteur working for the dinghy company and was caught and killed; his family denounced him for taking the money. The bridge is over. Murrash's dead face, plastered, turns white.

"It was something that violated everything we knew about the boundaries between life and death," says Gjon. "The man remained ready between the two like a bridge, without moving in one direction or the other. This man was immersed in non-existence, leaving his form behind him like a forgotten garment " (Kadare, 2011, p. 74).

At first, no one passed on the bridge. "*The bridge was like a meaningless dream, dreamed by the river and the two shores together. Thus, the stranger bridge, fallen from*

the banks of the river in time, seemed utterly alone as it clung to its limbs of stone, its only prey ... " (p. 82).

Then people started using it. Trade moves east across the bridge and it will not be long before the Ottoman armies move west. The flow of power and enterprise resumed. The above work is the picture of the Kaderian universe that narrates the beauty of Arbëria and tells the story of a different Albania. According to him, the cause of the transformation of the Arbër ethnicity is found in the medieval past. The oneness of the present can only be captured through a return to the medieval past. In the mouth of the character, Gjon, are put the truths of the bridge in Ujana e Keqe, and more deeply the truths of the history of our country and the Albanians, as well as the fabricated lies about it.

Through retelling differently, Kadare aims to highlight the truth, because "he who puts the truth into practice comes to light." To accept the truth means to accept oneself, that is, not to remain in the darkness of ignorance, lies, or fabrications, but to find oneself in the light of truth. Truth is the only salvation. Kadare's stories come to life through various literary forms, metaphors, symbols, and masterful allegories. The mission of revealing the true story that permeates reality accompanies every line of the work "Bridge with three arches".

The power of myths, ancient Albanian legends, folklore that pierce reality are the basis on which such a mission is based. The author creates original metaphors, which have had another meaning in previous times, as well as complete characters, through which he reveals the painful actuality. The work also combines *the tragedy of the wall* motive, the grotesque with the presence of Turkish-Ottoman songs, the costumes of dervishes, the incomprehensible language of foreign contractors, etc., in contrast to the high Arbërian culture, the generous and humane spirit of medieval Albanians, this is evident in the monk's hospitality to travelers, foreigners, and ballad collectors (Bellos, 2008).

The novel "Bridge with three arches" shows past events, which have been distorted for various reasons. The consequences have been felt in the heart of the Arbërian ethnicity. The roots of the tragedy and the real other side of the story are found and made visible through the early legend of building a bridge. This is also Kadare's narrative purpose.

Truth is found subdued underground. It is up to the writer to revive it, in the conditions when "*non-existent folklore and stories continue to be woven...*". Thus, history is colored with ideology and opportunism deviating from its mission. Only a conscious creator can bring out the truths by retelling the Arbërian history, which is stained with blood, and it happened again, walling it in itself. Others, meanwhile, viewed the Arbërian history with astonishment as the (self) takeover of the Balkans (Kadare et al., 2001).

Kadare intends to trace the beginning of this great evil for the Arbërs, which seems to have no way of being freed from the shackles even today, which seem hellish, full of sadness and anxiety. This is explained concerning the totalitarian system in which the country was plunged in the years 1945-1992, a system which the author saw as an opportunity for a second living sacrifice, of which he was a part (Kassabova, 2021).

In these conditions, the true chronicle of this tragedy should have remained a testament of the author before the people and the world, as "times are gloomy, and the future is darker than ever," as even the times that the country was going through were gloomy, as was the gloomy hope of resurrection from isolation. The voice had to be raised and the testimony had to be left written before the isolation and oppression were repeated (Morgan, 2020).

Kadare has created the aesthetic code of the characters in the novel as part of the mastery of his narrative discourse (Marinaj, 2008). His characters self-discover through first-person narrative, as in the case of the Catholic monk, Gjon, who tells about the construction of the bridge. In this way, we can get information about his person, such as profession, narrative, creative and diplomatic intuition, etc., which are revealed little by little throughout the novel. We can also understand the full spiritual picture of the author, which unfolds little by little until the end of the novel.

Narrative purpose and aesthetic discourse underlie Kadare's masterful choice of characters. The Monk character, who is the main character, or Hero, according to Propp, retains an undisputed authority due to age, maturity, and intellect to write chronicles.

Kadare draws a parallel between Catholic monks, who tell the story, write chronicles and witness the events of the Middle Ages with Albanian prelates educated in Western countries, as cultivators of genuine Albanian culture. The character of the monk in this work empowers Kadare's prose and enables him to present to the reader a true and authoritative narrative.

In the pre-Ottoman period, Catholic monks were key figures in the Arbërian identity and diplomacy of the time. European and world communications were kneaded in their chancelleries. The real centuries-old Albanian archive is found exactly in the medieval Albanian assemblies and parishes. For this reason, Kadare chooses the monk as a man devoted to God and the homeland in parallel with his conduct in their service. The writings of Albanian monks are often paid with blood, so they are part of the martyrs of Albanian writing and national history or sacrifice to create the bridge between the present and the future.

"The three-arched bridge" includes the metaphor of the bridge and the border. Kadare uses the metaphor of the bridge, comparing it to a monster that devours people, ie as a threat to the Albanian people, while other Balkan writers use the bridge as a union of divided coasts, peoples, or civilizations. Kadare's bridge contains the tragedy of the

wall of living Albanians alienating the metaphor of unity. The Ottoman Empire aimed at gaining Albanian territories and not at cooperation or the establishment of inter-civilizational ties (Cox, 2006).

In the case of Kadare, the metaphor of the bridge takes on a new meaning and nuance by combining it with the metaphor of the border, which symbolizes the clash, protection, or fear of the unknown. Albanian land unfolds as a borderline between western and eastern cultures and civilizations, where any union or division of them weighed on the backs of our people. The border symbolizes intersection, separation, and bypass.

The need to build the bridge is symbolically related to the intrigues of the Ottoman Empire to enter the Albanian identity. This is related to the imposition of Albanians on the birth of a new world and the death of the old world. As a result, Arbërian princes found it difficult to choose and unite to defend the Arbërian ethnicity, as they had chosen death. For this reason, Kadare expresses sadness and fear that such decisions turn the people into a bridge over which civilizations clash and cause bloodshed and mourning. It is up to the Arbërians to save and preserve the culture of the centuries-old European civilization before other civilizations that aim to dismantle it (Sulstarova, 2006).

Kadare's short prose aims to highlight modern distortions and fabrications about Albania and Albanians. "Bridge with three arches" shows the identity of Albanians, who have been trampled by the Balkan wars, which has brought serious consequences to this day. He claims that the identity of Albanians is European (Mukherjee & Roy, 2021). This identity has faded, but not ruined under the influence of Orientalism imposed in Albania. This is justified by the fact of the Arbërian autochthony of many ancient myths, songs of knights, traditions, and folklore. Also mentioned is the fact that our neighbors who came to the Balkans claim that the ballads belong to others and not ours. The ignorance of Albanian traditions, even their appropriation is explained by the fact that the Balkan neighbors wanted Albania to be isolated and oppressed.

"WHO BROUGHT DORUNTINA" BALLAD SISTERS IN THE BALKANS

The ballad is a short folkloric, narrative song, based on the most dramatic part of a story, which continues towards the end through dialogue and a series of incidents. It represents a type of literary and musical development in Europe during the late Middle Ages and tends to have a strict dramatic structure, sometimes leaving out all the preliminary material, all the exposure and description, even all the motivation, just to focus in the most important scene.

The word ballad, according to the dictionary of the Albanian language, is a small poem or poem with regular verses, with a narrative character, usually with a popular and lyrical spirit, which gives a historical, legendary or heroic event. The origin of the

ballad in the Middle Ages, according to folklore scholar Gjergj Zheji is related to the mysterious epic-lyrical stories, mythological beings, an approach liked by romantics, who wrote famous ballads based on this medieval genre.

As for the ballad, two main similar motifs remain throughout the Balkans, those that can be called common: the wall and the dead brother. Death is a very present motif in ballads. In Albanian folklore, there are two ballads, where the motive of death stands out especially: the ballad for the walled bride and the ballad for the dead brother. Passed down from very early times from one generation to the next, both ballads have undergone their own transformations. Their collection dates back only to the 19th century and their recognition beyond the local Balkan borders dates back to the same time. The ballad about the walled bride is unknown beyond the Balkans, while the ballad about the dead brother is known through Lenora's similar motif in the rest of the continent. Both ballads have a significant impact on the literature.

All attempts to give a date of birth or a specific place of origin to the ballad about the dead brother in the Balkans, which is considered part of the repertoire with mythical sources along with the wall ballad, have failed. Starting from the end of the century. XIX, with the release of published versions, various scholars have tried to shed light on the origin and time of birth of the ballad. Given the Romantic School and at the same time the processes of nation-state formation, the avoidance of scientific judgment seems to have dominated en masse. Scholars of the Balkan countries who dealt with the ballad, mostly in their works, paid attention to the gathering of facts or the serving of facts, in favor of an argument fixed from the beginning, that of the national priority of origin and high level artistic compared to neighbors. Studies of the ballad have not taken into account the migration of motifs in an east-west direction, which was taken for granted in fairy tales, since the publication of the archetype classification by Vladimir Propp (Propp, 2010).

Alan Dundes says about the ballad that her motive has migrated just like in fairy tales and the direction of migration has been the same as in fairy tales: From India to the areas to the west of it, until she arrived in the Balkans. Dundes in this edition talks about an age that exceeds 1000 years in terms of this ballad and about 700 variants of it in the world.

The ballad about the dead brother is quite popular in the Balkans. The motive of the younger brother, who is resurrected to bring the sister home has left a strong impression on the people who have inherited the ballad. In the rest of Europe, the ballad about the resurrection of the dead man is known as Lenora's motive, since in 1773, the German lyric poet Gottfried August Byrger published the impressive ballad "Lenore", based on a popular motif well known on the continent. A boy and a girl fall in love and decide to get married. But the boy has to go to war, suddenly. The mourning of the girl and her search raise the man from the grave.

The difference between the Balkans and Europe in motive, scholars see as a difference between the social development of the two types of societies. In some cases, the Balkan motive is seen in the light of incest and the tendency for distant marriages, precisely to avoid this. Endogamy versus exogamy is often interpreted as the essence of the ballad. The strong dominance of patriarchal relations often explains the changing Balkan motive. The difficult historical situation, the invasions, the wars, have made the Balkans more united within the family. A special concept of love and bonding has been created that unites the members of a family. But this does not mean that the Balkan type of our motive expresses a completely different content. Here we are dealing with a special culture, that of the Balkan peoples, says Fatos Arapi.

Death, though irreversible, was perceived as granting a small amnesty to the deceased who could not fulfill the promise in life. The ballad itself relies on the motive of death. It begins with the death of the brothers and continues with the death of the rest of the family, mother, and sister. In Albania, the first collections of its variants date to the end of the nineteenth century. After the wall ballad, it is the most widespread and most popular in all Albanian territories (Baldwin, 2005).

In Albanian literature, the writer Ismail Kadare has brought two responsible novels with two motifs of ballads: "Bridge with three arches" and "Who brought Doruntina" (Atlantic, 2009). But what is the relationship with death in these two ballads, according to the perception that appears in the Albanian versions. Death as a sacrifice required not by the subject itself appears in the ballad for the walled bride and death as an impossibility to fulfill the promise by the subject itself appears in the ballad for the dead brother. In fact, in both ballads' death is seen in a special relationship with life, sometimes as a service to life and sometimes as an obstacle to it. We have two ways of a life-death relationship. The bride is sacrificed and goes from life to death, to fulfill the prophecy, while the dead brother is temporarily resurrected, passes from death to life, to fulfill the purpose.

The resurrection of Constantine in the ballad of the same name shakes the times with the violation of the taboo of return from the other world, which was once considered the special (exclusive) attribute of the Messiah, and is followed by the euphemism of peace with death and the god of qualities his. It can be thought that human power can be just like that of the gods. The author is seduced by the idea of rebirth and resurrection, which gives hope to man, at a time when he risks extinction in the community. In Kadare's work, the transition from biblical resurrection to secular resurrection is masterfully treated, going beyond the usual mystical background of interpretation.

Let's look at the basic structure of the ballad referring to the summary with its variants. The ballad speaks of a large family, usually a family where the mother is widowed and has 9 sons and a daughter. When the sister reaches the age for marriage the end of the nineteenth century. After the wall ballad, it is the most widespread and

popular in all Albanian territories. Let's look at the basic structure of the ballad referring to the summary with its variants. The ballad speaks of a large family, usually a family where the mother is widowed and has 9 sons and a daughter. When the sister reaches the age for marriage and the pilgrims come home, the younger brother pushes her marriage away. The mother doubts that she will be able to meet her daughter so far away, but the younger brother assures her that whenever the mother wishes to meet him, he will go and bring the sister home. While shortly after the sister's marriage in the family a disaster occurs. The brothers all die. The mother mourns and mourns, at home and in the church cemetery, where the boys rest. She curses her little brother in the grave because he can no longer see his daughter. On the other hand, the married girl away is given a very sad ballad and without news about the family. The little brother's soul finds no peace until it fulfills the promise it has made. His grave is constantly described as wet and muddy. His boundless desire to fulfill the promise magically becomes a reality. The tombstone becomes a horse. He goes to the sister and convinces her to leave immediately for the mother. The sister suspects her brother all the time because he looks strange to her and smells of dirt. Her suspicions are reinforced by the birds that sing along the way, that they are seeing a miracle, the dead go with the living. The younger brother manages to take his sister to the gate and then returns to the cemetery. The drama concludes her latest act on the doorstep, when mother and daughter die of longing and pain, while realizing that little brother has done something beyond human.

Doruntina was brought by the word given, says Captain Stres who leads the investigation, while for one of the priests he was brought by a random "someone", for the Albanian moralists, for the psycho-critics the hostage of incest. However, the essence of the truth is that Doruntina was brought by the wind of the Renaissance changes, the shock of medieval morality, the search for the new humanist testament, where the Holy Man would be the final destination.

The secular ballad of the country presents its version of the resurrection with Constantine as a Messiah for the countrymen, which differs from the biblical version. Constantine brought to man the return and partial defeat of death by reviving the hope of renewal and rebirth.

The legend of Doruntina can be described as the end of a historical era, where the ancient links between the culture of our people and the culture of other civilized countries were revealed, visible in some key moments, such as the bond of marriage in Bohemia, the bond of alliances with barons and nobles near and far, etc. The first Albanians were an integral part of the continental space, as they moved safely in it.

Meanwhile, the reality in which the work was written is completely different. Albania was isolated, there were no friends, alliances, open gates, a situation that could provoke resentment, anger, rage, and resentment. Although politicians demanded the

closure of the country, Kadare's novel preached the opening based on the antiquity of the Albanians. In this context, Constantine calls for a moral renaissance.

Studies on ballad variants have shown that they have their differences in terms of certain moments in the ballad. In some variants the brothers in the family die from the plague, in some, they die from the serpent venom, in some from a battle in a war. In the vast majority of variants, we do not see the presence of brides or boys at home. In some variants, it is the mourning of the mother that worries the dead son, in some others, it is the mourning of the sister. In some variants, it is the God who lifts the brother from the grave. A two-variant division for the ballad is generally preserved by scholars. The first type includes those ballads where the mother-son relationship is the main one and the second type includes those ballads where more importance is given to the sibling relationship. Romanians and Greeks have the first most common variant, Serbo-Croats have the second variant. While Albanians and Bulgarians have both variants (Kadare et al., 2001).

If we refer to Propp's morphology, this ballad includes a set of functions, such as: Absenteeism: when Doruntina leaves the family environment to marry a prince away from Arbëria; Impact: when Doruntina is warned by her mother not to marry in remote areas; Violation of the prohibition: when Constantine decides to marry his sister away; The revelation: relates to Captain Stress' investigation into who brought Doruntina. Also, various allusions are made by characters, such as monks, etc. Surrender: can be explained by the fact that the promise given to the mother, makes Constantine dependent to fulfill that promise at all costs; Cunning, Collaboration: in this case, we cannot talk about cunning or collaboration; Satan or absence: it is noticed that the mother, as a member of the family, misses her daughter, to have her close after all her sons had passed away; Mediation: the absence of the mother becomes known and the hero-Constantine enters into action, as the mother asks him in the grave to fulfill the given trust; Initial interaction: Constantine considers the way to resolve the issue, even though it means going from death to life and vice versa; Departure: in this case, Constantine leaves the life of the dead in order to fulfill the promise given to the mother.; The first function of the donor: in this case, Constantine takes the horse to carry out his mission, i.e. there is no donor person; The hero's reaction: Constantine turns the impossible into the possible; Obtaining a magical agent: In this case, there is no concrete agent, but the faith, which was sacred among the Albanians of that time, gives Constantine the power to fulfill it; Leadership: Constantine goes to his sister's house; War: there is no war in this case, as Constantine takes the form of a man and persuades his sister to follow him; Branding: Constantine gets neither sign nor injury in this ballad; Profit: Constantine emerges victorious and takes his sister home fulfilling the promise given; Liquidation: The issue that sets Constantine in motion is resolved, as his sister reaches out to the mother; Return: After completing his mission, Constantine returns to the tomb; Follow-up: No one could follow Constantine, as he left very quickly; Unknown arrival: There is no

unknown hero even though it is alleged that someone else brought Doruntina; Unfounded allegations: Doruntina is thought to have been brought in by a stranger; Difficult task: The hero is not tested directly, but his act is tested through disbelief that he was the one who brought Doruntina, also tested mothers and sisters who learn a truth about Constantine; Solution: Stress investigations show that Doruntina was brought by Constantine, while her mother and sister die after learning what happened; Recognition: The hero is known, Constantine has kept his Word; Exposure: We do not have a false hero to appear to people; Transfiguration: Constantine does not undergo a physical but a moral transfiguration, as he has already won; Punishment: The punishment of the mother, though she cannot be considered in the proper position of a devil is her death; Wedding: In this case this feature does not exist. We see that the ballad "Who brought Doruntina" does not include all the functions of Propp, but the sequence is almost the same.

"THE OBSTRUCTED"

At first glance, the book "Obstructed, requiem for Linda B" may seem like a novel, which, among other things, talks about the nostalgia of Tirana, famous places, such as "Skënderbej" square, "Kafe Flora", hotel "Dajti", etc. although its essence is related to the birth, growth and girlhood of Albanian women in exile. The state and not fate emerges as the main obstacle in this sense.

The nostalgia built on the memory of past eras, on the same capital, which seems to change every few years, as a result of the political changes so far, takes on an even more dramatic nuance if one considers that it is seen and described through the eyes of someone who is forbidden to trespass in that city. This novel is one of the pinnacles of Kadare's art, whose clarity and luxurious style are reminiscent of diamond beauty, which often contrasts with tragedy.

The book shows the condition of a playwright, Rudian Stefa. Like many of Kadare's protagonists, Stefa is unstable, complex, and deeply unpopular. He is self-esteemed, obsessed, and unfaithful to his current girlfriend, seeing another woman, Migena (discovers the anagram), whom he attacks during an argument, hitting her on the head on several bookshelves. "He had extended his hand as if he wanted to grab a girl by the hair two or three times in his life, but he had never really done it. "It simply came to our notice then."

When he is summoned for questioning by the Party Committee, Stefa fears that Migena has reported him, or that he is in some sort of trouble for his last appearance. It turns out that his investigators are most concerned about the death of a young woman, a friend of Migena, Linda B, whose body has been found with a copy of Stefa's latest book. What follows are details of the investigation, along with excerpts from Stefa's play, dream sequences, various searches and discoveries, interspersed with meditations on the myth of Orpheus and Eurydice. Melodrama becomes myth, and myth, in turn, informs melodrama.

A *Girl in Exile* is a book about learning to live with the dead, and with death, with shadows, and with loss. It is about ghosts - about spectators who follow people, places, states and psyches. In Stefa's game, a ghost testifies in court, but his conversation is inaudible to the man who killed him and his words about the killer are inaudible to those sitting in court. "No playwright had dared to make such a change in the ghost figure in thousands of years. It was not a superficial change - how to make a half- evaporated and half-real ghost, or put it on a dinner jacket and a gas mask - was an essential reconception. "His ghost would be dual in nature." Kadare is a dual man, writing about himself separated.

This story, too, is an embodiment of Kadarean nuances and style, thematizing dictatorial life, but looking at it from different aspects, which create a complete picture of the social situation (Ukaj, 2017). The powerful narrative unfolds a metaphor for the tragic fate of a heroine, Linda B, spoken of only through other characters, such as Rudian Stefa, writer and playwright, Migena, his girlfriend, and state security, who investigates the suicide of Born. As a result, playwright Rudian Stefa comes into play. Linda loved him without his knowledge. This was made possible through Migena, who had given Linda a book by Rudian, signed by him. Linda B invents cancer in order to visit the capital challenging state restrictions, but the fact that her illness did not exist makes her commit suicide. The author uses a rich narrative, with psychological and artistic insight, to describe Rudian's experience in relation to the love Linda nurtured for him. The story of Rudian and Linda resembles the story of Orpheus. The latter descends into the underworld to bring back to life his girlfriend, Eurydice, but because of his guilt fails in this mission and remains lonely and sad on earth, just like a dead man among the living.

In addition to the literary image between Rudian and Orpheus, there is also the image between Eurydice and Linda B, which is followed by the tragic fate of love that is immortalized after death. In this way, Kadare's prose combines mythological and psychological dimensions (Avdyli, 2019). Linda B, despite being prevented from pursuing her love, she is passionate about life being denied. The reasons for the denial are meaningless and absurd. Because Linda B has never known freedom, she invents cancer to know it. When nothing changed in her life, she chose a painful end. Painful was also the tracing of her life after death. On the other hand, playwright Rudian Stefa was not entirely clean in the eyes of the government due to a drama criticized by the Communist Party. His relationship with Linda B made the situation more complicated. Kadare presents through a dramatic story Rudian's sudden entry into the investigator as well as the fable of the suicidal girl. On one hand, stands the savage power of the dictatorship that has faded human life and on the other stands the passions and youthful love (Morgan, 2006).

If we refer to Propp's morphology, this work includes a set of functions, such as: Abstinence: when Linda B intends to leave the internment environment to go to Tirana; Impact: when everything else was against this decision, like the ruling party,

etc. ; Prohibition violation: Linda B invents cancer to get away with; Detection: relates to the investigation of her illness which does not actually exist; Surrender: the fact that she has left with a false diagnosis makes her subject to punishment by the authorities; Hile: Her friend tries to connect her to reality; Collaboration: Linda B. was forced by her friend to get a book signed by her playwright boyfriend; Satan or absence: Rudian appears on stage; Mediation: Linda's friend steps in to introduce him to Rudian; Initial interaction: Linda B., after falling in love with Rudian considers considering the way to be close to him, even though it meant risking her life; Departure: in this case, Linda B. makes the decision to leave the place where she was interned; The first function of the donor: in this case, there is no donor person; The hero's reaction: Constantine turns the impossible into the possible; Getting a magic agent: In this case, there is no concrete agent, but Linda B. tries to resist the harshness of the proof she has undertaken; Leadership: She heads to Tirana out of love for Rudian; War: She faces power; Branding: Linda B. gets no sign either; Profit: In this case Linda B. does not win; Liquidation: She kills herself; Return: Goes to death; Prosecution: Her case begins to be investigated; Unknown arrival: There is no unknown hero, as even Rudian himself had no chance to defeat the fate of the girl he loved; Unfounded allegations: Investigators allude to Rudian's possible connection to Linda B. ; Difficult task: The hero is not directly tested, but her act is tested, as is Rudian, who learns the truth about Linda; Solution: Investigations reveal the truth, but cannot act on the already dead victim; Recognition: The hero is known, Linda B. represents the fate and tragedy of many Albanian girls in exile; Exposure: We do not have a false hero to appear to people, as Rudian cannot be; Transfiguration: Linda B. does not undergo a physical transfiguration due to the tragic last; Punishment: Violation of the rules of power caused her death; Wedding: In this case this feature does not exist. We see that the work "The obstructed" does not include all the functions of Propp (Propp, 2012) but the sequence is almost the same.

CONCLUSION

Ismail Kadare is one of the most famous Albanian authors in the international arena, nominated several times for the Nobel Prize in Literature. He came in contact with contemporary or modern European literature in Moscow. His philosophical approach made him known as an important innovator in Albanian literature. The novel "The General of the Dead Army" aroused much controversy. Kadare was positioned as the advocate of democratizing the country in a new light. He entered history freely through the literary background

When it comes to the research questions of this study, we can briefly say that regarding the first question on the influence of contemporary literature of the time when Kadare's work had its momentum, such as modern, postmodern literature and the literature of socialist realism, we can say that undoubtedly the influence of modern literature is clearly seen in Kadare's work, starting from the structural elements and the method of dealing with themes, while the influence of socialist

realism literature is seen to be minimal, or almost invisible in Kadare's work , although his contemporaries acted differently.

Regarding the second question on the influence of popular literature and folklore on Kadare's work, the influence is clearly seen. Kadare is seen to have a habit of taking the themes, motives and names of folklore literature, tales, myths and old Albanian legends, bringing them back modernized, which is one of the main elements of his success.

Regarding the third research question on the presence of elements of Propp analysis elements, Kadare uses myth as the mainstay of the novel's edifice. Folk tales of oral heritage serve as a way of interpreting history in Kadare's work. In Kadare's work, the conviction of Albanians in Kanun and Besa is presented more than in religion. Kadare has a special love for the past, which is factual. It takes into account well-known historical events. Kadare often uses the conventional plot at every step of his subject. However, he takes into account the deeper meaning of the myth.

However, in a large number of cases, it is not easy to apply Propp's scheme in the literature of socialist realism, due to the influence of factors inside and outside the work, such as the difficulties of the characters in the time of communism, which do not allow the end of the characters to be happy, just as it happens in fairy tales and other works according to Propp. On the contrary, they could end up in death, because the system itself killed their dreams and happiness, as was the case of Linda B. in Kadare's "Obstructed". It is noticed that the heroes are the common people and that the devils are persons in power, who create innumerable difficulties for the heroes.

The literature of socialist realism, extending in a not short period, remains completely uninterpreted: not in the causes and context of flourishing, but in its internal legitimacy, in the determination of values and anti-values, in the distortion of the relation of the principles of poetics internal and extra-literary imposing factors, etc. Outside the complexes related to the political period of communism, today's studies should be directed to this period, as a scientific necessity, to complete the structure of the history of the development of literature in Albania. Modernity is a new interpretation of the secret spirit of the world, it is the search for a new referent for the world that discovers it by marking it. The intertexts of history and function are evident in the works taken in the socialist analysis of the 1980s.

On the other hand, we have a kind of opposition from Ismail Kadare, whose work, although very modern, has received not only a series of motifs from Albanian tales, myths, and legends, but are also structurally complete and are at the same time works of which contain more Propp functions than all the works of the various authors of the period analyzed in the study. It is no coincidence that in this study a special place is given to the writer Ismail Kadare, as we will see in the following chapters, the most famous and most translated Albanian writer of all time. Many of the processes of emancipation and modernization of Albanian literature are explained in the case of

Kadare. The inevitable Albanian modernity cannot be explained without its paradoxical character. In a characterized traditional or conservative society, the movements for modernity have not been without consequences, without misunderstandings. Modern literature, however, has been more modern than Albania itself.

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V. Propp Analysis of the 80s Short Prose Poetics in Albanian Literature

Dhurata Lamcja

PhD, European Scientific Institute

Abstract

The article explored through the lens of tale poetics, to find out whether there was an outline of the theory on the poetics of the tale in Albanian historiography or in the literary critical thought of the 80's, based on the structural morphological analysis of V. Propp. The chosen prose was among Albanian prose writers of the 80s, such as: V. Koreshi, N. Lera, Z. Çela, N. Prifti, K. Kosta, E. Kadare, S. Spasse etc. The methodology used within the article is based on the qualitative approach of the study, specifically on Propp's structuralist methodology has been used to categorize the functions and characters included within the short prose of the 80s Albanian authors. The study findings concluded that the cognition function is seen to have a special feature, both from the frequent use, as well as from the increased drama of the passages when this function occurs within the prose of the 80s literature in Albanian prose. Here we can say that the authors of socialist realism, have inadvertently followed a tradition or are strongly attached to the motive of recognition. Another important element is the transfiguration, which in the classical structure of the tale on which Propp has based his analysis, is totally physical, and for the most part is associated with a good change in the appearance of the hero, such as the removal of rags and wearing new clothes before taking the throne. In the case of the works analyzed in this paper, we have major changes that occur to the characters, both physically and in character development, but these changes occur with causes predetermined by the author, and do not occur for superficial reasons, as this was against the ideology of the time.

Keywords: *Propp, prose, 80s, Albania, author, structuralism, poetics, tale.*

Introduction

The poetics of the tale, which reveals the totality of artistic means and features of the style of a writer or a literary direction (Dictionary of the Albanian Language, 2021). It includes various elements, such as the creative individuality of the writer, the peculiarities of the artistic portrait, the individual means of expression, the display of the wonderful, magic, mysticism, myth, mystery, narrative style, treatments of social

problems and phenomena of life, characters, popular psychology and wisdom, the dynamics of the development of the tale, its fable, etc. In the current article, the main aim is to analyse elements of the poetics of the tale will be studied in relation to the short prose of the 80's, through the optics of the structural morphology analysis of V. Propp. Prose is the conversion of a certain poem into a text using more or less the same literary figures. It is a simple creation. It has a freely defined structure, so it lacks the formal metric structure of the verse found in traditional poetry. It includes complete grammatical sentences and, consequently, paragraphs. Prose is widely suited to spoken dialogue, factual discourse, and actual and imaginary writing. Short prose is characterized by the breadth of an imaginative form of characters (as in dreams), the monopolizing monologue, and a shrinking dialogue (Dabishevci, 2020). The article will focus on revealing the poetics of the tale, elaborating on the research question: *Is there an outline of the theory on the poetics of the tale in Albanian historiography or in the literary critical thought of the 80's, based on the structural morphological analysis of V. Propp?* The identification of these elements in the Albanian historiography of the 80's will serve to build a hierarchy of literary values in this perspective. In this period, we include prose writers, such as: V. Koreshi, N. Lera, Z. Çela, N. Prifti, K. Kosta, E. Kadare, S. Spasse etc, and their short prose novels.

Literature Review: The Influence of Communism on 80s Prose in Albanian Literature

It is inalienable that social, political and economic changes deeply affect the psychosis of a society, without question they are convincingly reflected in the artistic work of the authors of the works. The process of formation of socialist realism in literary creativity goes hand in hand with the crystallization of social consciousness "down", within the psychology of the masses and "up", with the strengthening of the ideological party institutes of the state. Endless discourses between artist circles in this plan, so competent is the new artistic unity as the "soc-realist method" that gained the status of state doctrine (Egypt, 2015).

During this period, literary production was forced to conform to the rules of the official method of socialist realism, which led, for the most part, to a literature deeply rooted in ideology, without true values (Gjika, n / a). Socialist realism in Albanian literature, in essence, took the form of a dynamic canonism (Even-Zohar, 1990). This was a method that was not imposed through texts, but prevailed as an external model of literary rules and norms, which served as the basis for literary productions.

Socialist realism was a creative method of literature and the arts, applied first in the former Soviet Union and then more intensively throughout the former communist countries during the twentieth century. In 1936, the Soviet government took measures to implement the indisputably total soc-realist method of all the arts in the USSR. Socialist realism became the dominant term in the science of Soviet literature and art sciences from the 1930s to mark the "fundamental approach" which "requires

the artist to present the concrete historical truth of reality in his revolutionary development", so literature had to be created with the task of educating workers in the spirit of socialism (Even-Zohar, 1990).

The notion of aesthetic "realism" had to do with the definition of "socialist", brought about the practice of subjugating literature and the arts to ideology. The demands for the use of the techniques of socialist realism actually became an obstacle, an anxiety to stop the creativity that for years was avoided against the spiritual life of the people, so that the writers created in their majority mediocre works of conformists who blew trumpets, which served propagandistic tendencies.

Methodology

The article is based on the qualitative approach of the study. The literature review on the chosen topic is a methodology used in order to collect data from studies as well as the works of Albanian and foreign authors to better understand the elements of the poetics of the tale in the short prose of the 80's. Moreover, Propp's structuralist methodology has been used to categorize the functions and characters included within the short prose of Albanian authors of the 80's, assessing whether there is an outline of the theory on the poetics of the fairy tale in Albanian historiography (Dundes, 1964). There is usually an initial situation, after which the tale usually assumes 31 other functions, implying the action of the character from the point of view of its meaning for the course of action. Thus, similar actions can have different meanings and vice versa. The article uses 31 Propp functions which are: abstinence, influence, prohibition violation, detection, surrender, deception, cooperation, satanism or absence, mediation, initiation interaction, initiation, first donor function, hero reaction, reception of a magical agent, leadership, war, branding, profit, liquidation, return, pursuit, rescue, unknown arrival, grounded claims, difficult task, solution, recognition, exposure, transfiguration, punishment, and weddings. Not all fairy tales provide evidence for all functions (Propp, 1968).

Characters are categorized into Satan, sender, helper, princess or prize, giver, hero and fake hero. These roles can sometimes be distributed among different characters or a character can be involved in actions by playing more than one role in the play (Propp, 1968). Propp's method is the "syntagmatic" way of estimating, where the structure of folklore is divided and described in the chronological order of the linear events included in it. Diachronic analysis, equivalent to syntagmatic analysis conveys the feeling of traversing the low levels of a story. The criticism regarding this approach lies in the fact that it concerns only the structure of the text, isolating it from its social and cultural context. Structural analysis can be successfully applied to folklore, or to traditional stories within a community that have co-existed as a source of entertainment and social narrative functions, which are best unfolded in the literature of different countries. Propp opened wide perspectives for the analysis of

folk history and narrative art in general, significantly advanced typological-structural investigations conducted in the West (Propp, 1968).

Discussion

Exactly in the 80's the prose of Albanian writers underwent changes as a result of socialist realism in literary creativity. The latter adapts to the ideology, the external system of literary rules and norms. The demands for the use of the techniques of socialist realism actually became an obstacle, an anxiety to stop the creativity that for years was avoided against the spiritual life of the people, so the writers created in most of them mediocre works of conformists, which served propaganda tendencies. Among the basic principles on which socialist realism was based were proletarian partisanship, the progressive spirit, the social and class appreciation of reality, events and people; national character and popular spirit; socialist content, national spirit, positive hero and revolutionary optimism. In the late 80's in our country, realism became a literary and historical term. He promoted schematism, political adaptation, solidarity with the ruling ideology and propaganda of the time. The critical, theoretical and aesthetic thought of that time, as well as limited the line of Albanian novels based on the principle of ideas, characters, conflicts, forms the composition, narrative flow, stylistic and linguistic characteristics, in detail, comprehensive to soc-realistic methods. The Albanian author learned to be a social activist, a fighter, prisoner, liberator, or censor, or censored, persecutor and persecuted, anti-fascist, anti-communist, cynical, aggressive, peaceful, indifferent, dissatisfied. Sometimes writers were heroes, somewhat justified for what they did, because the dictatorship did not leave many choices, but the worst was the silence or rejection of the artistic creation of Albanian writers. The novel of Albanian literature of these years left the empty space so long for the desired reader in a subconscious world of a writer who really discovers what a reader needs. In addition to the literature published in Albania, there was also the literature of prisons and the literature of drawers; creators who, due to political persecution, were deprived of publication, but who had continued to write and publish their books in prose, poetry, dramaturgy, memoirs, etc. In addition to the works of the drawers, it is worth mentioning the censored or banned works, which despite the coercive measures, did not remain completely faithful to the socialist realization, so they did not remain hostage to dogma and therefore were banned and censored. It is worth mentioning the main metaphors of totalitarian discourse, which were the metaphor of the siege of the Albanian people in the face of the external and internal enemy, the image of the enemy presented with a negative emotional charge, the positive hero as a representative of a healthy Albanian socialist society, the construction of the cult of the leader as far-sighted and eternal and the sick figure of the micro-bourgeois intellectual.

The conduct of Propp analysis in this study is not related to the use of a benchmark for the quality of literature and literary works in the 80's, but comes as a missing innovation in terms of analysis and empirical approaches to literature when it comes

to literature, and mainly for the literature of this historical period. If we refer to Propp's structuralist analysis of the works of Albanian short prose writers in the 80's, we can say that there is a partial outline of the theory on the poetics of the fairy tale in Albanian historiography and literary critical thought. Propp in fact individualizes the structure of a very specific literary genre, that of Russian magic fairy tales, a genre rich in formulas which are repeated identically, through the structural analysis of a limited and organic fairy tale body: thus with full consciousness, no will be counted in any genre or narrative, but as a structure of a certain historically defined genre. Propp's morphology focuses on constant elements rather than variable details that characterize the creative contribution of individual narrators. Perhaps the most common criticism, one that can be raised against structuralism in general, is that an emphasis on basic structure can lead to a devaluation of the materials being studied and the specific people and cultures that create these materials.

However, in a large number of cases it is not easy to apply Propp's scheme in the literature of socialist realism, due to the influence of factors inside and outside the work, such as the difficulties of the characters in the time of communism, which do not allow the end of the characters to be happy, just as it happens in fairy tales and other works according to Propp. On the contrary, they could end up in death, because the system itself killed their dreams and happiness, as was the case of Linda B. in Kadare's "Obstructed". It is noticed that the heroes are the common people and that the devils are persons in power, who create innumerable difficulties for the heroes.

On the other hand, the difficulty of incorporating Propp analysis is related to the developmental stage of literature itself, beyond the influence of communism on ideological elements, the literature of socialist realism itself had entered a somewhat modernist, at least compared to pre-war literature Second in Albania, and not taking into account the foreign literature which was considered decadent. This literature does not have a canonical structure, like that of the classical tale presented by Propp, where the structure stops at most of the list of analysis functions. However, the literary period itself, mixed with the ideology and artistic-political constraints of the time, causes a large part of the functions of analysis to be missing, or to appear indirectly, by means of parallels, which were obligatory for the authors at a time when it was impossible to express their direct opinion.

However, in different authors is seen a greater mastery in working the structure beyond the content, where we can certainly single out Kadare. Among the most common elements found and during the analysis of various works and authors, we can notice the absenteeism or the escape and absence of someone, evil or cunning which often came in the form of the invading enemy, the element of initial interaction, which unites the hero or characters of the work with the antagonist or representative of evil, while raising the moral values and not only of the other party. Also, among other functions we can include the function of branding or marking, ie leaving the mark on the hero or antagonist, the function of victory, unknown arrival, difficult task,

recognition and transfiguration. In some of the works, among which we can mention the clear example of "Ballad of Kurbin" by Vath Koreshi, the hero's sign comes as a reminder of his bravery and sacrifice, but nevertheless makes him find no later happiness in life.

On the other hand, the function of victory is seen that in works of heroic character is emphasized more, showing that the Albanian people always win against the enemy, even in very difficult situations, while on the other hand, in works of more personal character, internal victory or and small individual victories of the characters are not given much importance. The function of the difficult task often takes the form of a heroism and self-sacrifice of varying magnitude depending on the character and the type of work, to suit the morals and needs of his country.

The cognition function is seen to have a special feature, both from the frequent use, as well as from the increased drama of the passages when this function occurs. Here we can say that the authors of socialist realism, have inadvertently followed a tradition or are strongly attached to the motive of recognition.

Another important element is the transfiguration, which in the classical structure of the tale on which Propp has based his analysis, is totally physical, and for the most part is associated with a good change in the appearance of the hero, such as the removal of rags and wearing new clothes before taking the throne. In the case of the works analyzed in this paper, we have major changes that occur to the characters, both physically and in character development, but these changes occur with causes predetermined by the author, and do not occur for superficial reasons, as this was against the ideology of the time.

Although the Propp scheme can be used to give a linear view of events, synchronous analysis would be more desirable than Propp diachronic analysis, to provide a greater sense of unity among the components of a story. In this way, the elements of the plot can be extracted from their existing order and regrouped according to different analytical schemes. One such reason has to do with the fact that it is not easy to grasp the profound meaning of events through Propp's diachronic analysis of communist literature in conditions where authors had to defend themselves against power and at the same time express their indignation at it.

Based on this analysis, a number of functions are missing in the Albanian works of the 80's, including mediation, the hero's reaction, the magic element and salvation. Mediation is a missing function mainly for ideological reasons, considering that the pride of the heroes does not allow them to mediate with the enemy, as in the case of the priest and the villagers with the foreign commander of Zija Çela's "Twilight Bells", bringing thus just one of many examples.

Based on all these findings, we can not analyze and draw conclusions about the quality of a work, and moreover an entire literature, only that it is not in full structural

compliance with a certain analytical model. However, taking into account the great compatibility of Propp analysis and its constituent functions with the oldest Albanian literature, from the popular myths and legends, to the literary stage when socialist realism appeared, linking both variables together, we can conclude that the influence of the ideology of the time was not only seen in the content of the works, supporting certain narratives and censoring others, but was also seen in the structure of the works, leaving a large part of them empty, without a intended to go and touch the reader in any way, albeit within politically permitted limits.

Many scholars consider the tale a reflection of social utopia and the developmental and structural continuity of the myth, and therefore the tale, beyond its aesthetic and ethical functions, also contains reflections of social and cultural, moral, and aesthetic paradigms. The tale with its very specific discourse, has a highly symbolic structure which takes on meaning only within the internal semantic context of the tale, having within it an essential truth, which has no sense outside the tale directly, nor makes sense if we see it as a parallelism or analogy in real life.

The intertextual interplay of fabulous structures, when it comes to Kadare's works, is investigable in his prose, sometimes even quite cultivated towards and intricate and difficult to locate precisely as oral hypertext in relation to the element of the authorial imagination that follows a is always supplemented by an oral model or becomes part of it. In some prose, signs of *trasmotiv* were found.

Considering one of the research questions of this paper, on the existence of an outline of the theory on the poetics of the tale in Albanian historiography or in literary critical thought, we can say that this outline appears weak if we consider the universe of Albanian literature as belongs to the time period analyzed in this study. Poetics is identified in theoretical and critical terms. Artistic prose does not function in the same way as other non-artistic verbal structures. The very need for a special portico for artistic prose makes us think of it as a separate genre, with its own features, problems and opportunities, different from others. In attempts to define poetics the tendency to distinguish it as indicative of the science and art of poetry at the same time has been observed. So poetics is presented to us as a functional analysis of literary development. It is important, however, that poetics be seen not only as the individual talent of the author, but also as a microstructure, as a socio-historical context.

The literature of the communist period in Albania, with a special focus on the literature of the 80's, develops between the two extremes in terms of taking motives and structural elements from fairy tales or similar literary categories. On the one hand, most of the authors did not have such an inspiration or basis and wrote works completely original and in accordance with the literary principles of socialist realism, which is evidenced by the profound lack of functions of the Propp model, however, are the same authors whose works are often analyzed as works of a certain historiographical significance, but not necessarily literary, as they are often seen to

have the sole purpose of conveying an ideological message to the reader. The literature of socialist realism, extending in a not short period, remains completely uninterpreted: not in the causes and context of flourishing, but in its internal legitimacy, in the determination of values and anti-values, in the distortion of the relation of the principles of poetics internal and extra-literary imposing factors, etc. Outside the complexes related to the political period of communism, today's studies should be directed to this period, as a scientific necessity, to complete the structure of the history of the development of literature in Albania. Modernity is a new interpretation of the secret spirit of the world, it is the search for a new referent for the world that discovers it by marking it. The intertexts of history and function are evident in the works taken in the socialist analysis of the 1980s. So the text to access it more from the lens of its connection to history. with the signs of ideological and political worlds, eccentric and parodic, as well as with the force humanism, cultural discourse and postmodernism.

Conclusions

The article explored through the lense of tale poetics, to find out wether *there wasan outline of the theory on the poetics of the tale in Albanian historiography or in the literary critical thought of the 80's, based on the structural morphological analysis of V. Propp*. The choosen proze was among albanian prose writers of the 80s, such as: V. Koreshi, N. Lera, Z. Çela, N. Prifti, K. Kosta, E. Kadare, S. Spasse etc. The cognition function is seen to have a special feature, both from the frequent use, as well as from the increased drama of the passages when this function occurs. Here we can say that the authors of socialist realism, have inadvertently followed a tradition or are strongly attached to the motive of recognition. Another important element is the transfiguration, which in the classical structure of the tale on which Propp has based his analysis, is totally physical, and for the most part is associated with a good change in the appearance of the hero, such as the removal of rags and wearing new clothes before taking the throne. In the case of the works analyzed in this paper, we have major changes that occur to the characters, both physically and in character development, but these changes occur with causes predetermined by the author, and do not occur for superficial reasons, as this was against the ideology of the time.

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Prevalence of Eye Diseases in Albania

Marsida Krasniqi

Department of Medical Science, University Aleksander Moisiu, Durrës, Albania
Our Lady of Good Counsel, Tirana, Albania

Abstract

Objective: In Albania there are few data regarding the epidemiology and the visual outcome of eye diseases. The aim of this study is to determine the prevalence of eye diseases among new patients in the department of Ophthalmology in “Our lady of Good Counsel”. **Methods:** This is a prospective, cross – sectional study in which 423 patients were included. The patients were examined from May 2019 till February 2020. Data collected from the patients were age, gender, ethnicity, visual acuity and diagnosis. All the data were analyzed by SPSS. **Results:** From 423 patients that were examined, 64.3% (272 patients) were males and 35.7% (151 patients) were females. Mean age of the patients was 42.3 years (with a range from three months to 87 years). Regarding the eye diseases, cataract was the most common eye disease with 19.7% of the patients, followed by retinal pathology with 10.9%. Glaucoma was evident in 9.8% of our patients, where visual impairment was noted in 31 patients (75.6 %). Ocular trauma was evident in 44 patients (10.4%) and majority of them had foreign body in cornea. From 101 children examined, 1.9% of them were diagnosed with congenital cataract. 16.8% of children had eye trauma, where 3 patients (17.6%) had open globe injury with visual impairment. **Conclusion:** Primary health care in all Albania districts should be trained for eye health education to facilitate patient’s education. An early diagnosis and treatment of eye problems (prescription of spectacles, cataract surgery, medical treatment for glaucoma and diabetic retinopathy) will prevent visual impairment and blindness.

Keywords: Prevalence, visual impairment, cataract, diabetic retinopathy, refractive errors, ocular trauma.

Introduction

Epidemiological studies regarding eye diseases and visual outcome are very important for prevention of them in the early stage of the disease by treating them and save the visual acuity (Prokofyeva & Zrenner, 2012). In Albania there are few data regarding the epidemiology and the visual outcome of eye diseases. The eye diseases

can affect the quality of life and the economy of the state (Resnikoff, Lansingh, & Eckert, 2016). To identify if a disease influence in the quality of life, the visual acuity is classificate in 4 categories according the WHO (World Health Organization) (Organization, 2014):

No visual impairment with visual acuity from 6/6 to 6/18

Visual impairment with visual acuity less then 6/18 to 6/60

Severe visual impairment with visual acuity from 6/60 to 3/60

Blindness with visual acuity les then 3/60 to light perception

However, in Albania we have some studies regarding the epidemiology of cataract in rural area (ZIU, ZIU, & ZHUGLI, 2018), showed that cataract affect more people over 55 years old with unilateral or bilateral visual impairment. Some other study shows the prevalence of blindness from diabetic retinopathy (Toti, Mema, Bejtja, Qafa, & Ismaili, 2009), in which the late diagnosis of diabetic retinopathy had an impact in visual acuity.

In this study we will determinate the prevalence of eye diseases among new patients in the department of Ophthalmology in “Our lady of Good Counsel”.

Methods

This is a prospective, cross – sectional study in the department of Ophthalmology in “Our Lady of Good Counsel”. New patients that came to the clinic from May 2019 till February 2020 were examined and diagnosed. In total 423 patients were included in this study. Data collected from the patients were age, gender, ethnicity, visual acuity and diagnosis.

To every patient visual acuity was taken by Snellen chart. Eye examination (conjunctiva, anterior segment, posterior segment) was done by slit lamp. Intraocular pressure was measure with Gloldman Applanation tonometer and visual field was done to all the patient suspected for glaucoma. Examination of retina was done by dilation of the pupil with tropicamide eye drops in adults and in association with atropine eye drops for children. Retina was examined by using a 90D lens with slit lamp or with a 20D lens with indirect ophthalmoscope. Patients with retinal disease and optic disc disease were examined by OCT of macula and nerve. All the data were collected and analyzed by SPSS.

Results

From 423 patients that were examined, 64.3% (272 patients) were males and 35.7% (151 patients) were females (table 1). Mean age of the patients was 42.3 years (with a rage from three months to 87 years).

	Male	Female	Total
%	64.3	35.7	100
Nr	241	151	423

Table 1. Distribution of patients regarding gender

Regarding the eye diseases, cataract was the most common eye disease with 19.7% of the patients, followed by retinal disease with 10.9%. Glaucoma was evident in 9.8% of our patients, where visual impairment was noted in 31 patients (75.6 %).

	%	Nr
Cataracta	19.8%	84
Retinal disease	10.9	46
Diabetic retinopathy	45.7	21
Hypertensive retinopathy	15.2	7
Age macular degeneration	30.4	14
Others	8.7	4
Glaucoma	9.7	41
Ocular trauma	10.4	44

Table 2. Prevalence of eye disease

Ocular trauma was evident in 44 patients (10.4%) and majority of them had foreign body in cornea (table 2).

From 101 children examined, 1.9% of them were diagnosed with congenital cataract. 16.8% of children had eye trauma, where 3 patients (17.6%) had open globe injury (table 3).

	%	Nr
Children	23.9	101
Cataract	1.9	2
Trauma	16.8	17
Open globe	17.6	3
Blunt trauma	82.4	14

Table 3. Prevalence of eye disease in children

Regarding the prevalence of different eye disease is shown in table 4. Some patients were diagnosed more than one eye disease. Blepharitis was the most common eyelid disease (%) followed by chalazion. Conjunctivitis and pterigium were most frequent diseases in conjunctiva. Corneal abrasion was evident in 53.8 % of corneal diseases, followed by keratitis in 28.2%. Cataract was seen in 19.8% of cases.

From 41 cases of glaucoma (open/close angle glaucoma), 3 cases (7.3%) were neovascular glaucoma. 65.8% of the patient had open angle glaucoma.

Retinopathy was evident in 46 cases, in which 45.6% had diabetic retinopathy. All of them reported that has more then 8 years treated for diabetes. Age related macular degeneration was seen in 17 patients (36.9%) and 4.2% of them reported visual impairment.

44 patients (13.9%) had ocular trauma and 38.6% were children. 20.3 % of patients with ocular trauma had corneal foreign body.

Regarding refractive errors, 62.2% of patients had myopia with mean age 32.7 (with a rage from 6 years to 67 years).

Eye disease	%	Nr
Eyelids	17.9	76
Chalazion	14.5	11
Blepharitis	67.1	51
Ptosis	2.6	2
Basic cell carcinoma	5.2	4
Dry eye	10.5	8
Conjunctiva	19.1	81
Allergic Conjunctivitis	44.4	36
Acute conjunctivitis	25.9	21
Pterigium	23.4	19
Pinguecula	6.2	5
Cornea	9.2	39
Corneal abrasion	53.8	21
Corneal ulcer	5.1	2
Keratitis	28.2	11

Corneal opacity	12.8	5
Glaucoma	9.7	41
Glaucoma Open angle	65.8	27
Glaucoma close angle	26.8	11
Neovascular glaucoma	7.3	3
Trauma	13.9	59
Periorbital hematoma	5.1	3
Conjunctival laceration	6.8	4
Lid laceration	1.7	1
Subconjunctival hemorrhage	23.7	14
Corneal abrasion	6.8	4
Corneal foreign body	20.3	12
Corneal laceration	1.7	1
Hyphema	10.2	6
Mydriasis	11.8	7
Lens subluxation	3.4	2
Vitreous hemorrhage	5.1	3
Commotion retinae	3.4	2
Vitreous	8.2	35
Vitreous hemorrhage	17.1	6
Posterior vitreous detachment	82.8	29
Retina	10.9	46
Diabetic retinopathy	45.6	21
Hypertensive retinopathy	15.2	7
BRVO	4.3	2
Retinal detachment	2.2	1

Retinitis pigmentosa 2.2 1

Macular edema 23.9 11

AMD 36.9 17

Refractive errors 17.2 73

Myopia 62.2 46

Hypermetropia 28.7 21

Astigmatisms 23.2 17

Lens 27.4 116

Cataract 72.4 84

Subluxeted lens 3.4 4

Pseudophakia 27.5 32

Table 4. Prevalence of specific eye disease

Visual impairment was noted in 9.7 % of patients, where cataract was the most common disease responsible in adults and hypermetropia followed by ocular trauma in children. Severe visual impairment was seen in 4.5% of patients, were diabetic retinopathy followed by age-related degeneration was the most common disease responsible in our patients. Blindness was seen in 1.4% of patients, where glaucoma was the most common disease (table 5).

	Visual acuity	%	Nr
No visual impairment	6/6-1/18	85.1	360
Visual impairment	<6/18-6/60	8.9	38
Severe visual impairment	<6/60-3/60	4.5	19
Blindness	<3/60 - NPL	1.4	6

Table 5. Classification of visual acuity in order to WHO categorization.

Discussion

Our study brings data regarding eye diseases discovered in a privet clinic in the period of time from May 2019 till February 2020. Visual impairment and blindness are the most causes that affect the quality of life (Weih, Hassell, & Keffe, 2002), (Krasniqi & Trebicka, 2020). Data from WHO (World Healthy Organization) regarding blindness says that 39 million of people in all the world are blind and 246 million had low vision (Who, 2013). Uncorrected refractive errors, cataract and infection diseases were the main cause of visual impairment (Who, 2012), (N. Congdon, 2004), (N. G. Congdon, Friedman, & Lietman, 2003).

In our study we evidenced that the prevalence of visual impairment was 8.9% and the main cause was cataract, diabetic retinopathy, and age-related macular degeneration in adults. Visual impairment in children had as main cause refractive errors and trauma (open globe injury). Blindness had as main cause glaucoma.

Different studies had represented glaucoma as cause for blindness (Who, 2012), (Kocur & Resnikoff, 2002).

Diabetic retinopathy was reported to cause visual impairment and blindness in other studies (Khan, Petropoulos, Ponirakis, & Malik, 2017), (Hendrick, Gibson, & Kulshreshtha, 2015).

The prevalence in our study may not be fully accurate because it doesn't includes patients form other districts of Albania and patients that has eye problems but don't come for medical visit as they don't have pain or redness in the eye.

Conclusion:

Our study indicates that the visual impairment and blindness in adults was due to cataract, diabetic retinopathy and glaucoma. In children visual impairment and blindness was due to refractive errors and ocular trauma.

The prevalence of visual impairment and blindness in Albania, can be prevent and reduce by providing health education in the primary health care. Early diagnosis and treatment can facilitate the rehabilitation of visual impairment and blindness especially by prescription of spectacles, medical treatment of glaucoma, surgery of cataract and diagnosis in early stage and treatment of diabetic retinopathy.

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Method for obtaining and physico-chemical characterization of collagenic extract of *Rhizostoma pulmo* from the Black Sea

Ana-Maria Pesterau

University of Medicine and and Pharmacy *Carol Davila*, Bucharest, Romania

Rodica Sirbu

University of Medicine and and Pharmacy *Carol Davila*, Bucharest, Romania

Emin Cadar

Ovidius University of Constanta, Faculty of Pharmacy, Constanta, Romania

Abstract

Rhizostoma pulmo is a jellyfish from the Black Sea basin that can be a source of natural bioactive compounds with substantial beneficial implications. It is important to use under-exploited marine resources in areas such as pharmaceuticals industry, medicine, cosmetics and dermatology. Marine collagen can be obtained from various sources. Several studies have focused on marine collagen, namely its extraction from alternative sources: fish, invertebrate marine animals such as sea sponges or jellyfish. The novelty is the extraction of marine collagen obtained from jellyfish of the species *Rhizostoma pulmo* found in the Black Sea and along the coast, the physico-chemical characterization, comparison with other types of collagenic extracts from fish and finally the formulation of a pharmaceutical preparation with medical applications.

Keywords: *Rhizostoma pulmo*, jellyfish, marine collagen, bioactive compounds, medical applications.

Introduction

Collagen is the most studied protein, with a wide range of applications, including the pharmaceutical, biomedical and cosmetic industries due to its special characteristics, which are of high biocompatibility, qualitative bioactivity and poor antigenicity [1]. Although there are various and abundant sources of collagen, the existence of various diseases among terrestrial animals is a threat to its use in our daily lives. The research aims to find an alternative that would reveal the many untapped marine sources, such as fish, jellyfish and some marine mammals. A brief description of collagen, its

characteristics, sources of marine origin, extraction, collagen peptides and their biological activities, as well as potential applications in various fields, is desired.

Hot water jellyfish (*Rhizostoma pulmo* Macri, 1778). Taxonomic classification: Kingdom of *Animalia*, *Cnidaria*, Class *Scyphozoa*, Subclass *Discomedusae*, Order *Rhizostomeae*, Suborder *Daktyliophorae*, Family *Rhizostomatidae*, Genus *Rhizostoma* [2].

Large jellyfish easily recognizable by the narrow band colored in blue, purple or pink that borders the slightly lobed edge of the umbrella. It is a very common species, numerous in the Black Sea, Mediterranean Sea, Sea of Azov and North Sea. It has a tall bell with a regular diameter of 20-30 cm, with 16 marginal lobes and 8 lobes. The buccal tentacles are overgrown and form a long and voluminous handlebar, fringed at the edges, so the axial length of a specimen can reach 50-60 cm [3].

It is a mycrophage, the primitive mouth being replaced by a pore system. A common species in the Mediterranean, we find it in the Black Sea only in the warm season, brought by hot water currents. Swimmers or those who bathe in the sea water, touching this jellyfish, can get a very unpleasant burn, caused by its bladder cells.

Collagen extraction from different jellyfish species

Collagen is the most abundant protein found in the body. These proteins form fibers that help build and maintain parts of the body, it is also found in the muscles, hair, skin, bones, tendons and ligaments. Researchers have identified at least 28 types of collagen, but those classified as type I, II and III represent 80% to 90% of total collagen [4]. All collagen molecules contain a triple helical domain, are generally involved in the formation of supramolecular networks and are made up of three α chains that may or may not be identical. These α chains contain at least one collagen domain or a triple helix motif characterized by the succession of Gly-Xaa-Yaa triplets where Xaa and Yaa are often Pro and Hyp residues, respectively [5].

Collagen currently has a wide range of applications in various areas of health, namely in cosmetics, the pharmaceutical industry and in healthcare (including plastic surgery, orthopedics, ophthalmology and dentistry).

In non-medical sectors, a notable use of collagen is in the food sector (food processing, as an additive and nutraceuticals), but most often in the form of gelatin, ie in its distorted form.

Fibrillar collagens are the most abundant extracellular proteins, they form a specific family of metazoans. Their structural and physiological properties have been used successfully in the cosmetics, pharmaceutical and food industries. The increase in the number of jellyfish has led us to appreciate this marine life as a natural product for food and medicine. Different species of Mediterranean jellyfish have been tested to

investigate the economic potential of their collagens. Different methods of collagen purification (tissues and experimental procedures) were analyzed. The best collagen yield was obtained using the oral arms with predilection for *Rhizostoma pulmo* and the pepsin extraction method (2-10 mg collagen/g wet tissue) see table Nr.1 [6].

Rhizostoma pulmo has been used in other experiments, these drugs are considered harmless to humans and for the abundant source of collage material [6]. The biological properties of *R. pulmo* were compared with mammalian fibrillar collagens in cell cytotoxicity and cell adhesion tests. There were no statistical differences in cytotoxicity ($p > 0.05$) between *R. pulmo* and rat type I collagen [1]. Their structural and physiological properties have been used in the food, cosmetics and pharmaceutical industries.

Materials and Methods

The characteristics of collagen are unique, both *in vivo* and in tissue engineering that attempts to attenuate the role of collagen in the extracellular matrix, based on cell cultures that verify the quality and properties of processed collagen.

Due to the fact that there are so many sources from which collagen can be extracted and so many types, it is essential to analyze the characteristics carefully and accurately [7].

There are several techniques that can be used to characterize collagen samples (solid or in solution) addressing morphological, structural and chemical characteristics [8]. With a precise characterization and a better knowledge of the sample, it is easier to obtain a desired biological response or to establish a relationship between the results and the characteristics of the structure of the product obtained.

The aim is to continuously monitor the results, trying to control the characteristics of the sample, resulting in a more predictable and accurate biological response.

The extracting marine collagen from jellyfish

A widely used acid solution for collagen solubilization is also used for the extraction phase, which is also called acid-soluble collagen (AUC), [9].

Skierka and Sadowska [9] tested the influence of various acids on the extraction of collagen from cod skin, including hydrochloric, citric, acetic and lactic acids, of which acetic and lactic acids have been shown to produce higher collagen extraction yields. Unfortunately, the process of collagen extraction normally results in a low yield.

To overcome this impediment, scientists applied an enzymatic treatment using non-collagen-specific proteolytic enzymes to aid the solubilization process, such as trypsin, pancreatin, ficin, bromelain, papain or pepsin, the latter being the most widely used. By applying pepsin, the resulting extract is called Pepsin Soluble Collagen (PSC) or atelo-collagen [10].

This treatment is very useful because it cleaves peptides specifically from the telopeptide region of collagen, which are non-helical ends, and thus, by hydrolysis of non-collagenous proteins, increases the purity of collagen. It results in a much more efficient collagen extraction, as it prepares the sample for solubilization, while reducing the antigenicity caused by telopeptides [11].

For this reason, it is common to use this proteolytic process after AUC extraction, thus obtaining the PSC mentioned above. The antigenicity of collagen is not only derived from its telopeptides, but is also linked to the presence of non-collagenous proteins, cells and cell debris, being the method of NaHO treatment of raw materials [12] important for removing this source of antigenicity. For the recovery stage, the collagen must be precipitated, usually obtained by adding NaCl to a final concentration which can vary between 2.3 M and 2.6 M in Tris-HCl (pH 7.5). The resulting precipitate is collected by centrifugation, dissolved in 0.5 M acetic acid, dialyzed and lyophilized, thereby obtaining a collagen which is soluble in dry acid and soluble in pepsin [13].

Jellyfish collagen is an alternative being an available and efficient source to use as a component of the matrix for tissue engineering, because it has a small amount of impurities. Due to the dry weight of the edible jellyfish, over 40% of it is collagen in an animal in which 95% is water [14].

From jellyfish large part of the body is called the umbrella, which is divided into a major component called the mesoglea and the outer skin: exumbrella and subumbrella collagen is obtained from the mesoglea, following a methodology based on solubilization in acetic acid.

Solution, usually time the extracts are then dialyzed against Na_2HPO_4 solution, resulting in precipitated collagens, which can be separated by centrifugation.

The collagen produced can then be purified by a re-precipitation method: solubilization in acetic acid and precipitation by the addition of solid NaCl. AUC can also be digested with pepsin to obtain atelo-collagen [15].

Purification methods

Jellyfish collagen is an available and viable source to use as a component of the matrix for tissue engineering, as it has a small amount of impurities. One of the methods used to characterize the purity and degradation of collagen is polyacrylamide gel electrophoresis with sodium dodecyl sulfate (SDS-PAGE).

By this method - gel electrophoresis, proteins and their fragments can be separated, depending on their size. Protein fragments can be observed by loading protein samples into the small wells of the gel, which, under an applied electric field, pass through the gel matrix according to their size: the smaller ones go further than the large ones, which remain trapped in the net of gel.

Some types of collagen obtained from different sources can be compared to existence data. The type of collagen (I, II) can be identified when the collagen bands are similar. In the case of collagen of the same type, but of different species, in which the amino acid sequence is altered, although the same chain types are present (e.g. $\alpha 1$, $\alpha 2$ and β chains in type I collagen), the position of the bands is slightly altered can be observed [16].

Stomolophus nomurai meleagris jellyfish collagen was prepared by lyophilization and crosslinking with 1-ethyl-3 (3-dimethylaminopropyl) carbodiimide/N-hydroxysuccinimide hydrochloride (EDC/NHS) for use in tissues with bioengineering applications [17].

Jeong and his collaborators [18] developed scaffolds collagenous extracts from jellyfish and poly (d, l-lactide-co-glycolide) (PLGA), by lyophilization and electrospinning, proposing their application on vascular grafts.

Addad has proposed the use of EDC-NHS crosslinked jellyfish collagen in various reports as a replacement for bovine or human collagen in biomedical applications [6]. More recently, porous scaffolds composed of refibrillated collagen, previously extracted from *Rhopilema esculentum* jellyfish, exhibited elastic behavior and were able to support hMSC culture, with overexpression of chondrogen markers under chondrogen stimulation, suggesting the use of cartilage tissue engineering structures [19].

Collagen extracted from other jellyfish species has also been proposed for later use in various applications, such as those extracted from *Cyanea nozakii* [20].

Results and Discussions

Marine collagen sources are known to have low antigenicity, *in vivo* studies should be considered before performing their use in engineering and tissue regeneration applications to verify the feasibility of using selected collagen in human implants.

In order to use alternative sources of collagen, all potential commercial alternatives to collagen must be considered. Collagen cannot be easily and advantageously replaced with other molecules, in their existing or developing compositions, it is necessary to verify whether the proposed options are economically viable and have similar biocompatibility profiles, physico-chemical and biological properties. Collagen also poses some risks due to its human or animal origins.

Table Nr.1 Extraction yields of collagen from different species of jellyfish expressed mg/g

Species	Collagen extractions(mg/g)	Organ	Number of animals used
<i>Rhizostoma pulmo</i>	0.83 to 3.15	umbrella	(3 animals)
<i>Rhizostoma pulmo</i>	2.61 to 10.3	oral arms	(5 animals)
<i>Cotylorhiza tuberculata</i>	0.453	umbrella	(1 animal)
<i>Cotylorhiza tuberculata</i>	1.94	oral arms	(1 animal)
<i>Pelagia noctiluca</i>	0.074	whole body	(1 animal)
<i>Aurelia aurita</i>	0.0079	whole body	(1 animal)

The primary biomedical applications of collagen were in biomaterials, especially as drug and gene carriers, tissue engineering, absorbable surgical suture, osteogenic and bone filling materials, hemostatic agents, immobilization of therapeutic enzymes, and burn/wound cover dressings [21].

Analysis of the antioxidant activity (AA) of protein compounds in *R. pulmo* demonstrated based on the extraction and characterization of membrane fractionated proteins, both soluble and insoluble, the latter being digested by sequential enzymatic hydrolysis with pepsin and collagenase. All jellyfish proteins showed significant antioxidant activity, from low molecular weight (MW) proteins correlated with higher antioxidant activity [22].

Recent major outbreaks of communicable diseases, such as prion disease, bovine spongiform encephalopathy (mad cow disease) or Creutzfeld-Jacob disease, have severely affected bovine and human health care products and have been banned in some cases (eg human by-products), for operations on the spinal cord and brain).

Collagen from marine sources such as that extracted from jellyfish avoids major problems arising from cultural practices and religious beliefs, which may limit the use of bovine and porcine products by some consumers and in certain parts of the world.

Properties of collagen

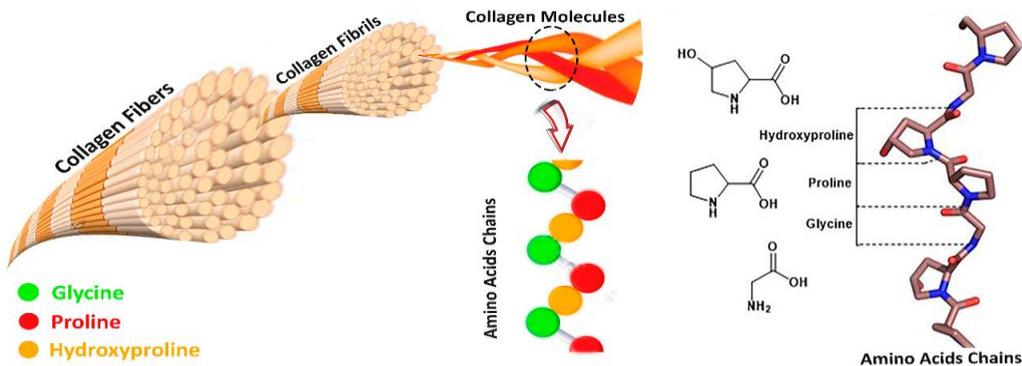


Figure 1. (a) Approximate content of collagen in different tissues; (b) Structure of collagen fibers, fibrils, triple helices of alpha chains and amino acid residues, 4-hydroxyproline (Hyp), glycine (Gly), and proline. (c) Amino acids chains structure of collagen. [<https://www.elsevier.com/es-es/connect/medicina/colagenos-tipos-composicion-distribucion-tejidos>].

Elegant and attractive alternative sources of collagen have been developed and proposed, using recombinant expression techniques. This allowed the expression of several types of human collagen in bioreactor-based eukaryotic systems and their subsequent isolation and purification [23]. Collagen-producing marine species have a distinct advantage in having a lower risk of transmitting infectious agents to humans and are considered safe for cultural and religious use.

It is anticipated that further structural stabilization of such marine collagens may be required by chemical processes, resulting in higher denaturation temperatures and increased resistance to enzyme degradation [24]. Marine collagen will provide new opportunities in health, diversification and reduction of safety risks and cultural and religious concerns, through the development of techniques for the production of collagen from alternative sources.

Medical, cosmetic, skin care and other collagen applications

Collagen is known for its biological action, with a great potential to be used in various fields such as dermatology, cosmetics, beauty. The current trend is to look for safe, high quality and reasonably priced ingredients. Marine proteins, and especially marine collagens, are nowadays found to be excellent functional ingredients for the cosmetics and pharmaceutical industries [25].

Due to water solubility, safety, biocompatibility, biodegradability, and easy extractability, as well as low immunogenicity, marine collagen has attracted scientific consideration for biomaterial applications [25]. On the other hand, due to the enormous amount of marine waste by-product such as fish skins, bones, scales,

cartilage, and heads, marine-based collagen has been used in various biomaterial applications such as bone tissue engineering, skin tissue engineering and regeneration, cartilage tissue engineering, wound dressing, drug delivery, etc.[26]

The properties of collagen lead to the development of creams, gels, serums with moisturizing action, anti-aging, anti-wrinkle or protection against UV radiation.

For the cosmetics industry, marine collagen was obtained from cold-water fish skins, such as cod, haddock and salmon. In addition, it is also produced from fish scales, by decalcification and enzymatic hydrolysis [25].

Jellyfish collagen has demonstrated comparable structural properties and stability compared to mammalian collagen. Jellyfish collagen also showed comparable immunogenic responses (platelet and leukocyte activation/cell death) and cytokine release profile compared to mammalian collagen *in vitro*. Studies highlight the potential of jellyfish collagen as a safe and biocompatible biomaterial for both osteoarthritis repair and subsequent applications of regenerative medicine [26].

Another property of marine collagen used is that it heals wounds from various traumas (burns, grafts, ulcers, etc.), and collagen-based materials are used specifically to prevent moisture and heat loss from damaged tissue, while providing a microbial infiltration barrier [27]. Collagen extracts have also been used in pharmaceutical preparations, for example, collagen barriers in ophthalmology, mini-pellets and tablets for protein delivery, gel formulations in combination with liposomes as a control material for transdermal delivery and nanoparticles for gene delivery [28].

Conclusions

Collagens are known for their biological action, with great potential for use in the biomedical, pharmaceutical and cosmetic fields. The future lies in finding viable alternative sources of safe, high-quality, low-cost raw materials.

Collagen is the most studied protein, with a wide range of applications due to its special characteristics, which have a high biocompatibility, good bioactivity and poor antigenicity. Marine proteins, obtained from various fish, jellyfish, sponges or other marine life are excellent functional products for the cosmetics industry, but also for the formulation of new pharmaceutical preparations for dermatological use.

It has been shown that the marine collagen source has applications in healing wounds resulting from various traumas (burns, ulcers, bedsores), the collagen-based materials being used mainly to prevent moisture and heat loss from the damaged tissue, while providing a barrier to microbial infiltration. Jellyfish collagen also has structural, stability properties comparable to that extracted from mammals.

The collagen extract also showed comparable immunogenic responses (platelet and leukocyte activation/cell death) and cytokine release profile compared to mammalian collagen *in vitro*. Studies highlight the potential of jellyfish collagen as a safe and

biocompatible biomaterial for both osteoarthritis repair and subsequent applications of regenerative medicine.

Collagen preparations are also used in drug delivery systems, for example, collagen shields in ophthalmology, mini-pellets and tablets for protein delivery, gel formulations in combination with liposomes as a control material for transdermal delivery and nanoparticles for eyelash delivery. The marine collagen extracted from *Rhizostoma pulmo* jellyfish will offer new and real opportunities, being an alternative source, especially in the field of health due to the diversification and reduction of safety risks as well as pre-existing cultural and religious concerns over "standard" sources.

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Politics and Religion in Western Balkans: A Social, Political and Legal Analysis

Kelmend Nezha

University of Tirana, Albania

Ferdinand Gjana

Western Balkans University, Albania

Abstract

The intersection of politics and religion in the Western Balkans has garnered significant attention in international politics in recent decades. This study delves into the influence and role of religious differences on the political climate in the region, highlighting their impact on domestic politics and international interventions. While scholars agree on the importance of religion in the politics of the Western Balkans, there is disagreement regarding its precise role. Some scholars view religion as a divisive force, citing the activities of extremist religious groups. Conversely, others argue that religious actors have a positive effect, contributing to conflict prevention and mitigation by leveraging their proximity to the public and understanding of their daily needs. Extensive research emphasizes the significant impact of religion on Western Balkan politics, highlighting its relevance as a factor that cannot be underestimated. Various global and regional actors, such as Russia and Turkey, have employed religion as a soft power tool in their diplomatic strategies towards the region, while the EU and USA have consistently emphasized the importance of improving religious freedom as part of the democratization process and updating the normative legal framework. Drawing on experiences from other ethnically diverse and conflict-ridden regions, there is reason to be optimistic about the potential role of religious actors in the Western Balkans, both presently and in the future. This paper conducts a comprehensive analysis of domestic and international political approaches in the Western Balkans, with a focus on religious dynamics over the past decades.

Keywords: Domestic politics, International politics, Western Balkans, Religion, Religious freedom

Introduction

Western Balkans: demography, religion and politics

The territory of the Western part of the Balkan Peninsula has been previously covered by the socialist states of Yugoslavia and Albania, which since the beginning of the 1990s, were created step by step into eight independent nation-states. For centuries, the population of this region has included ethnic groups with different religious affiliations and languages, where as a result their coexistence has not been easy; it has been associated with conflicts.

The wars that took place as the multi-ethnic state of Yugoslavia disintegrated are only the last evidence of this reality. Albania and the successor Yugoslav states of Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro and Serbia today number more than 18 million people. Slovenia and Croatia, with a population of over six million, were also part of the former Yugoslavia and are now members of the large European family. While in other countries, the majority of the population lives in poverty where the level of prosperity is low compared to the rest of Europe.

The global economic and financial crisis had a negative impact, giving a blow to the economy of the Western Balkan countries. According to United Nations data during the period 2010–2015, emigration rate from the Western Balkans reached 200,000 people. Most of these migrants were qualified young citizens who were settled in different EU countries. Emigration is not a new phenomenon in the Western Balkans region. In the 1960s, many new workers left their countries in recruitment agreements with Western European countries. Subsequently, they were pursued in the 1990s by hundreds of thousands of people fleeing war and violence. Although many returned after the war ended, some remained in places where they had found temporary shelter.

The regions have their own respective dynamics which is semi-autonomous, and not independent from the system of great powers and domestic politics. The Balkan region, referring to political developments over the years, remains a region that generates constant conflicts and instability as a result of global competition between the great powers. Western Balkans before the era of national country has always been a border of division for great empires such as Rome, Byzantine and Ottoman Empire. Overall, the Balkan countries have lived in relative stability and peace under the imperial regime, while the dose of conflict has been heavier at the time of the exchange of hegemonic energy. This relative autonomy has been constantly infiltrated by the Great Powers, and at certain moments of conflict, the Balkan countries have been used as representatives in the conflicts of the great powers, and sometimes as opportunistic countries in an attempt to maximize their benefits. The interest of the Great Powers in the Balkans is mainly limited to the interest of the security of the Great Powers; this interest is not permanent, as it varies depending on international conditions.

The Balkans are perceived as a crossroads between the world's major monotheistic religions - Roman Catholic and Eastern Orthodox branches of the Christian faith, Islam and remnants of what were once important Jewish communities in urban centers such as Istanbul, Sarajevo and Thessaloniki. Slovenes and Croats belong mainly to the Catholic faith; Slovenia also contains a Protestant minority. Autocephalous branches of Eastern Orthodoxy predominate in Serbia, Macedonia, Greece, Romania and Bulgaria. About 80% of the Albanian population in the Balkans belongs to the Islamic religion, but there is also a Catholic minority in the northern part of Albania as well as an Orthodox minority in the southern and central areas. Bosnia and Herzegovina's Muslims represent the area's largest Slavic community. In the Balkans, religion has been a promoter of conflict, but it has also served as a force for empathy and mutual understanding. However, religious diversity remains an important part of the cultural specificity of the region.

Geopolitics of the Western Balkans region

The violent dissolution of Yugoslavia has had a major impact on the creation of a new geopolitical reality, which has brought the collapse of ideological blocs in the Western Balkans region. This led to the reduction of doses of conflicts of great powers. But in addition to this aspect, another negative phenomenon prevailed for almost a decade, where the break-up of Yugoslavia was accompanied by divisive inter-ethnic conflicts, including the first NATO intervention, but also many regional and European diplomatic initiatives as well. At the end of the Cold War between the two blocs and the violent dissolving of Yugoslavia, the Balkans appear with a new geopolitical reality, where in addition to the main classical countries, which existed in the region after World War II, new countries such as Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Macedonia and Kosovo were created. Various well-known scholars have claimed that the Balkans or Southeast Europe are defined and divided within them in different forms. The EU in relation to its interests has configured a certain region, as in the case of the "Western Balkans", which expresses more the creation and evolution of a political concept than a geographical concept (Metushaj, 2018).

Inter-ethnic and inter-religious conflicts

One of the main characteristics of the Balkan states is their multinational and multicultural composition. Throughout history, unfortunately, these values were not used as advantages, but on the contrary, as causes for occasional disputes and conflicts between citizens and states.

Within the Western Balkans there are several hotspots such as Kosovo, Bosnia and Herzegovina, the southern part of Serbia, western Macedonia. Peace in the Western Balkans, and especially in these areas, is ensured by the presence of foreign military forces. The peace, maintained in strongly way can hardly be considered a true and stable one. Withdrawal of international troops, before disputes between nations and states are resolved, would be a serious threat to peace and stability in the region. This

situation, where economic and social problems are not lacking, dictates the need to strengthen all efforts towards easing tensions between ethnic and religious groups and preventing new conflicts.

Within the Balkans exist three major Euro-Asian and African religious, such as: Christian Orthodoxy, Catholicism and Islam. Unfortunately, during the history is noticed that the followers of those faiths have not lived in harmony with each other. Mutual respect and tolerance among them has lacked. Nowadays, the situation is getting even worse. However, the problem, as it has been stressed, is extremely complicated and it requires systemic research in finding the ways and making conditions for mutual understanding and living in tolerable neighborhood.

As in many other countries of the world, also in the western Balkans, different socio-historical conditions have influenced the development of different concepts of state and religion and their relationship. Politics and religion are often tightly connected with each other. Religions have created countries, but states have also supported and strengthened religions. Religious beliefs through revolutions and gradual influence have changed social structures, country or state policies. Communist, atheist ideology left deep traces at all levels, politically, culturally, nationally and religiously. Suddenly in the late 1980s and early 1990s, he faced a massive ethno-mobilization, the ghost of nationalism, and the politically imposed identification of religion and nation. This society also faced its half-reading on religious issues, thus providing a safe haven for ecclesiastical nationalism and nationalist populism. Therefore, it was possible that in this region, in the conditions of a fratricidal war and long-term politicization of religion, someone witnessed a later, secondary "religion" of politics and interethnic conflict. However, they mainly resulted from political and interethnic conflicts. Religion emerged as an important element of ethnicity, and this is probably why these wars have sometimes been labeled as interfaith conflicts.

One of the hottest conflicts that still today remains without a stable solution is the Kosovo-Serbia conflict. In 1999, NATO bombed the Serbs in Serbia and Kosovo in the name of preserving a multicultural Kosovo (SLETZINGER, 2011). Since the beginning of this conflict, the United States and the Europeans have seen Serbia and the Serbs generally as "the problem". Resolving the conflict Serbia-Kosovo, would mean a crucial contribution in maintaining peace and stability in the whole region. Nongovernmental organizations can bring their respective ideas and suggestion on this issue, but resolving the problem in a satisfactory level, now is under the International Community's responsibility.

Albania: From Communism to Political and Religious Pluralism

Communism is based on historical data and is destined to reshape human society anywhere in the world as an intermediate stage between dictatorship and democracy. This is achieved through a model that emphasizes equality and permanent confrontation. In a political system based on this essentially totalitarian ideology, it is

impossible to achieve reconciliation between those who believe in this ideological principle and those who seek different modes of government. For 45 years (1941-1985), the Albanian dictatorship made the lives of Albanians dark and creepy. This is a cruel tragedy that cannot be described in words. It has not only caused irreparable consequences in terms of crimes against humanity, torture, and persecution of a large part of Albanians, but also caused irreparable consequences in the isolation and poverty of the entire country, and still caused painful wounds.

By the end of 1944, Enver Hoxha's partisans controlled most of Albania and established a provisional government to achieve its goals. Suppression of tribal leaders, collectivization of agriculture, industrialization, migration of people from villages to cities, and oppression of religion (Tarifa, 1995). Therefore, when Hoxha died on April 11, 1985, he left Albania a legacy of oppression, technological backwardness, isolation and fear of the outside world. Albania was the last country in Eastern Europe that began the transition from a communist regime to a democratic system in the early 1990s.

Political Pluralism after 90ies

In the early 1990s, after the establishment of political pluralism and the realization of national unity, it marked the mission of establishing the rule of law and a democratic system. At that time, the political representatives did not establish a tradition of freedom and democracy, so they were affected by the conscious or unconscious practice of state centralization. This totalitarian approach also follows the exclusive and conflictive spirit of the one-party system. The political majority representing the anti-communist majority from 1994 to 1996 showed signs of violence and even led to the imprisonment of opposition politicians. These are signs of authoritarianism and are seen as an intermediate stage between dictatorship and democracy (Krasniqi & Hackaj, 2015).

Religious pluralism after 90ies

In the activities carried out during the communist period, religion left obvious traces and further consequences. In 1967, the communist authorities launched a violent campaign to eradicate religious activities in Albania, claiming that religion had divided the nation and left the nation in a backward predicament. Students and students combed in rural areas, forcing Albanians to give up their religious beliefs. Although members of the Labour Party did not even complain, by the end of the year, all churches, mosques, monasteries and other religious institutions were closed and turned into warehouses, stadiums or workshops. The culmination of the campaign was the statement that Albania has become the only atheist country in the world, and Enver Hoxha's attempt to sell it as a heroic act is one of his greatest achievements.

Historically, Albanians have not been affected by religious beliefs due to their national feeling. Regardless of the religious beliefs imposed on you or they voluntarily accept

them, racial self-determination is paramount to them. This is due to the geopolitical environment created by history for Albania. Therefore, historical and geopolitical views indicate that Albania became the key point where the Roman and Byzantine churches met and separated, but despite the conflict between them, the Albanians were not affected. Albanians are located between East and West, established religious harmony, and proposed the idea that various differences (religion, culture, province, etc.) must be recognized rather than dangerous assets. This religious pluralism has already worked.

Thus, after the fall of communism, Albanians were given freedom of religion. They were now free to practice their beliefs. As a result, new currents were introduced in the country, also because theologians educated abroad returned to Albania with religious doctrines that differed somewhat from the traditional one. Being not indifferent to religious belief, not only political and ideological pluralism has been protected, but also religious pluralism (Elbasani & Puto, 2017).

The presence of religion in political parties and the role of religious communities in politics and society

Religion is a mobilization factor. In the vacuum of state power (such as 1997), it may be abused, but unlike other social institutions, religious institutions stand up to condemn violence and manage social tensions. Fortunately, the Albanian religion continues to maintain good relations with the country and strengthen relations with each other. However, the current social structure of Albanian society seems to be a guarantee of peaceful coexistence among religious groups. Political and economic interests became the main interests after 1990, avoiding religious problems. The absence of religious groups and special interest groups is the basis for maintaining such peaceful coexistence.

On the other hand, a reassessment of the historical tradition of religious tolerance and universal relations will promote and enhance the quality of Albanian democracy. The political, social and economic changes that have taken place since the country was opened to the progressive world require more willingness to recognize and accept the diversity of Albanian society. There is nothing harmful, and it will be more useful if the Albanian state and religion reach a consensus on a series of religious and political issues. We hope that the country will remain neutral with respect to the various religious practices that appear in a pluralistic society and protect them equally.

Albania has not been subject to major interreligious conflict (State, 2003). During the last three decades, some isolated cases of tension have been recorded. In early 2000s, the Bektashi community was the target of vandalism, intimidation and threats of violence, which, according to Bektashi leaders, was the result of the division created by foreign-influenced, intolerant interpretations of religion.

The sphere of public activity can be secular and religious in nature, but it is important to clearly separate them and avoid the influence of religion on political laws or beliefs. The coexistence and inter-religious tolerance of the Albanian religious community, more than the spiritual leaders of the religious community, should be attributed to the history, national culture and psychological traditions of Albanians.

Interfaith dialogue and harmony

Religious tolerance is regarded as an extraordinary achievement, which has withstood the test of the turbulent times experienced by the country. The most important factor in support of religious tolerance in Albania is that it is the common culture united by Muslims, Christians and non-believers. Although traditional religions are regarded as part of a common culture, they are not regarded as insurmountable obstacles to mutual understanding and cooperation between religious sects. The challenge of fundamentalism in religion to religious tolerance is precisely the gap between religion and culture.

The fact that Albania is characterized by religious tolerance is the starting point for inter-religious dialogue. On this basis, inter-religious dialogue strengthens the culture of religious tolerance. In the discourse on religious tolerance, nationalism emphasizes that race and language are the basis of Albanian nation and unity, not just religious beliefs, which are important political and moral factors for maintaining religious tolerance. Ideally, in a democratic society, tolerance should be motivated not only by considerations of ethnic unity, but also by respect for human rights and the rule of law, but in our view, the term "religious tolerance" is more relevant than "religious harmony" (IRCA, 2019).

The challenges of religious communities relating with politics

During the period of atheism from 1967 to the end of the 1980s, the cruel oppression of society by religion meant that most of the younger generation who grew up at that time had no public contact with religion, nor had they established close ties with religious symbols and etiquette.

Because they recognize the role of religious leaders in promoting religious tolerance today and during this period Historically, Albanians have paid more attention to the legal and practical division between the state and the state Religion; respect for basic human rights and freedom; secularism is a characteristic of society; And national sentiment, this is the key factor in achieving religious tolerance. Religious tolerance as the basic value of Albanian society, it is the unity element of citizens who have citizens of various religions in the country.

Bosnia and Herzegovina: The Challenges of Politics and Ethno-Religious Differences

Bosnia and Herzegovina, since it emerged as an independent state in the 12th century, has been composed of great variety of religious groups, such as: members of the

Bosnian Church, Catholics; Eastern Orthodox Christians; Muslims, Sephardic Jews and Protestants who settled after the Austro-Hungarian occupation in the 19th century. Different confessions and ethnic migrations, defined Bosnia and Herzegovina as a multi-religious and multi-ethnic country. During the socialist regime in Bosnia and Herzegovina, as one of the republics of the Socialist Federative Republic of Yugoslavia (SFRY), religion was propagated as retrograde leading to the exclusion of religious communities from socio-political matters, and atheism was endorsed, but not violently imposed, by the political regime. Despite being officially excluded from the state-building process under the socialist regime, religion was and continues to be a pillar of ethnic identity and ethnic differentiation in Bosnia and Herzegovina.

During the socialist regime, religious communities were excluded from socio-political issues, and atheism was adopted, but not imposed by force. Although religion was officially excluded from the state-building process under the this regime, it was and continues to be a pillar of ethnic identity and ethnic differentiation in Bosnia and Herzegovina. This has had a major impact on establishing a strong relationship between political issues and religion, which intensified in the years leading up to its declaration of independence in 1992. Moreover, religion was a crucial element in victimization during the armed conflicts that followed, as it was the main element of ethnic identity. In the post-conflict period, the religious doctrines of Bosnia and Herzegovina were used to support national political ideologies and to legitimize new political institutions. Consequently, it has fostered a religious revival especially among the younger generations, as well as strengthened the relationship between politics and religion in Bosnia and Herzegovina.

Religious composition

Referring to its legal framework on religious communities, Bosnia and Herzegovina is a secular state where none of the dominant religions or religious communities can be given official status. So, the state cannot interfere on religious organization and matters and at the same time, representatives of the communities can not formally interfere or participate in political issues (IDM, 2019).

In the regard of the religious diversity of Bosnian society, the law allows the state to provide equal financial support for all services of religious communities such as: cultural, heritage, educational, social and charitable, all these provided in a non-discriminatory manner. Freedom of religion and freedom from discrimination are constitutionally protected categories, which may be limited in accordance with respective the law and international standards for the purpose of protecting public security, health, morality as well as the rights and freedoms of others (Herzegovina, 1995).

The religious demography of Bosnia and Herzegovina is distinguished as one of the most diverse in the region level and continent as well. According to the 2013 census, Muslims constitute 50.7% of the population, Orthodox Christians 30.7%, Catholics

15.2%, while the remaining 3.4% belong to religious minorities (Jews and Protestants) or consider themselves as having no religious belief. Due to a strong correlation between ethnicity and religion, the three dominant religious groups broadly correspond to the three dominant ethnic groups. Bosnians are predominantly Sunni Muslims, Serbs are predominantly Serbian Orthodox, whereas Croats are mainly Roman Catholics. This strong correlation is demonstrated in the census results, where the ethnic composition correlates almost directly with the religious composition of Bosnian society, with Bosniaks constituting 50.1%, Serbs 30.8% and Croats 15.4% (Alibašić & Begović, 2017). Indeed, changes in the territorial distribution of religious groups after the wars of the 1990s also correspond to equivalent changes in ethnic composition.

Recently, have not been done any surveys on religious observance, but referring to the US Department of State's International Religious Freedom Report in 2006, the rate of religious observance depends on different religious and age groups, with higher observance noticed among Catholic Croats, and the younger generations of all three dominant religious groups. This evidence of the religious revival in post-conflict Bosnia and Herzegovina was partly triggered by the role played by the religion during the conflict itself (Bureau of Democracy, 2006).

Inter religious issues

The religion had played a major role in the regard of ethnic and cultural groups in Bosnia and Herzegovina. During the conflict period, during 1992-1995, it became the key element in the victimization of ethnic groups (Oddie, 2012). Even though the conflict was characterized as "ethnic", religious identity played a defining role in what we understand as "ethnic cleansing" during the war. Bosnian Muslims used the designation "Muslims" to express nationhood in the former Yugoslavia's legal framework. Through this "identification" the term became primarily a cultural and ethnic one, instead of religious. So, the policy of ethnic cleansing was directed at "Muslims" regardless of their actual religious observance. Moreover, the destruction of mosques during the conflict period has been considered as evidence of the intent to destroy Bosnian Muslims as an ethnic group.

Referring to This historical background inter-religious issues have always been present as well as the obstacles towards reconciliation in post-conflict Bosnia and Herzegovina. Nowadays, inter-religious issues are characterized by the lack of constructive dialogue between groups, religious segregation in education and discrimination of religious communities. Besides from the creation of the Inter-Religious Council (IRC) in 1997, aiming to promote the shared values of all of Bosnia's religions, religious representatives have not been sufficiently involved in the peace building processes (Kostrešević, 2016).

The absence of interfaith dialogue at the local level has been detrimental for members of religious minorities returning after the conflict. Most returnees have reported

selective enforcement of their rights by authorities, while religious leaders have reported discrimination by local law enforcement agencies in their investigation of acts of violence, vandalism and threats, and in providing protection to victims. Religious segregation in primary and secondary education is another important obstacle in achieving an inclusive education system. Religious education is provided in schools, but it usually involves classes on the religion of the majority religious group within the community, compounding discrimination towards pupils belonging to minority faiths. The lack of a worthy interfaith dialogue at the local level has had negative consequences in terms of generating conflicts. Most returnees reported selective enforcement of their rights by authorities, while religious leaders reported discrimination by local law enforcement agencies in their investigation into acts of violence, vandalism and intimidation, and in providing protection to victims. Religious segregation in primary and secondary education is another major obstacle to achieving an inclusive education system. Religious education is provided in schools, but usually includes classes on the religion of the majority religious group within the community, increasing discrimination against students belonging to minority faiths. (OSCE, 2008)

Based on a research conducted by (Silvestri & Mayall, 2015), citizens in Bosnia and Herzegovina identified mostly themselves with their religion rather than with their state. Another comprehensive survey on the role of religion in this region, conducted by university professors from Mostar, found that Bosnia and Herzegovina is a traditional society in which religion and religious communities play a significant role, especially because religious affiliation overlaps with ethnic belonging. Religion plays an important role in everyday life of 66.8% of Bosnians and Herzegovinians, while 17.3% are ambivalent towards the role of religion. It is noteworthy that the importance of religion in everyday life increases among younger generations, whereas it decreases among more educated societal groups. The respondents who considered religion as very important were primarily university professors, journalists, and those involved in NGOs.

Concerning to the influence of religious on attitudes towards societal issues such as poverty, justice, equality, crime and social cohesion, respondents showed mixed opinions. According to respondents, religion has a moderate to strong influence on attitudes to societal issues in Bosnia and Herzegovina with the average answer of 4.76 (on a 1 to 7 scale). Eight respondents said they believe religious arguments have moderate influence, while seven respondents said religious arguments have very strong influence on these societal issues.

Respondents also believe that religious leaders in Bosnia and Herzegovina are influential within their own community of believers. Ten consider them to be very influential, whereas eight respondents consider them somewhat influential, and six respondents consider them influential. Two respondents refused to provide an answer on this question. Overall, the majority of respondents believe they have a

strong influence within their community with an average answer of 5.78. Respondents also believe that religious leaders and their representatives in Bosnia and Herzegovina have medium to strong influence on public opinion in general, with an average answer of 5.2.

The relationship between religion and politics became stronger in all countries of southeastern Europe after the fall of communism as religion recovered the influence it had before. In Bosnia and Herzegovina, religion and politics are considered as interdependent, but the state has not achieved much in creating an inclusive political community for all religious groups, and especially for minorities. The opinion survey conducted for this report demonstrated that ten respondents believe religion has a significant impact on political questions in Bosnia and Herzegovina, and only one respondent believes it has no impact on politics. Overall, respondents believe religion has strong influence on political questions since the average answer was 5.24.

In the opinion survey from 2010–2011 on the relationship of religion and politics in contemporary Bosnia and Herzegovina, the large majority of citizens (74.5%) said that the role of religion in politics should not be stronger. Interestingly, of the 19.4% who believe that religion should have a stronger role in politics the majority are from younger generations.¹²⁴ Comparing this to the results of a survey conducted at the end of the 1990s which showed that this generational group had the lowest affiliation towards religious values, the change in the impact of religion is evident. It is indicative of a radical shift in the system of values supported by the younger generation, which is explained by the strengthening of the role of religious communities and institutions in the society.

Respondents were asked to give their opinion on whether religion has positively or negatively influenced the development of political processes, democracy, inter-ethnic relations, social cohesion, economic well-being, tolerance and peaceful coexistence, and good neighborly relations among Western Balkan countries. The most negative influence of religion is visible in the sphere of political processes and inter-ethnic relations, while tolerance and peaceful coexistence and good neighborly relations were also negatively affected by religion, according to the respondents' opinion. They think that religion and religious leaders have failed to contribute in areas where religious communities are usually the driving force of change. International religious organizations have provided substantial humanitarian assistance during and after the armed conflict. So, in many international denominational organizations, especially those from North America, have contributed to reconciliation through interfaith dialogue and training on conflict resolution.

Religious diversity – threats and opportunities

The peaceful coexistence of various groups living in Bosnia and Herzegovina has been disrupted by the 1992-1995 armed conflict. The lack of an interfaith dialogue during the post-conflict period brought even more divisions between different religious

groups. The transition process in Bosnia and Herzegovina has been described as a "negative peace" situation, seemed by a failed reconciliation between different religious groups. Although religious belief was not the main cause of the conflict, the religious context supports conflict positions and further divisions between the three religious groups. Since the end of the conflict, there has been no substantial effort by religious leaders to both promote coexistence and to reach a unified approach to certain social issues. For these reasons religious leaders have engaged in interfaith dialogue through the Interfaith Council (IRC), established in 1997, as well as several other similar initiatives. (Hodžić, 2019)

Kosovo: Religion, Politics and State Building Process

In Kosovo, there is a strong sense of secularism in the political and intellectual spheres. In the former Yugoslavia, integration policies implemented in some areas populated with Muslim citizens, brought an atheist political and intellectual elite. Islam was practiced in worship practices, annual religious festivals, and traditional ceremonies. According to a 2016 study on the impact of religion on ethnic identity in Kosovo's state-building period, the country's quest for independence was not religiously motivated. (Demjaha & Peci, 2016) Many Kosovars envisioned a secular state, especially due to the lack of a unitary religion. But after the Kosovo War and NATO intervention in 1999, religion became more important due to a combination of circumstances such as a weak economy, political instability and social disorientation. Thus religion became more visible in all spheres from personal life to society in general. With the introduction of the mass media and the increase in internet access, public debates about religion have increased over the years.

Referring to the last survey, citizens were asked how important religion is for most people in Kosovo. They were asked to rate the importance of religion on a scale of 1 (not important) to 7 (very important). At the end, resulted that the average was 5.3, where five respondents considered religion very important and nine other respondents considered religion to have a moderate to strong importance. So, it was found out a mix of opinions and no common trend among citizens with similar occupations. Some of them with a specific occupation think that religion is important while their colleagues are more skeptical. For example, a respondent working in government has rated religion as not important, while another again a respondent working in government has rated religion very important. (Shehu, 2019)

The role of religion on developments in Kosovo

Respondents were asked in this survey to give their opinions on a very crucial issue, whether religion has positively or negatively influenced political developments, democracy, interethnic relations, social cohesion, economic well-being, tolerance and peaceful coexistence, and good neighborly relations among the Western Balkans.

According to them, religion had a particularly positive influence such as on tolerance and peaceful coexistence, social cohesion, and interethnic relations. It was noticed that respondents gave the “positive influence” answer most often in the aspect of tolerance and peaceful coexistence. They believed that religion has positively influenced tolerance and peaceful coexistence in Kosovo. While only five respondents believed that religion has negatively influenced Kosovo’s tolerance and peaceful coexistence. For both social cohesion and interethnic relations, were 12 respondents that felt religion had a positive influence. More mixed responses were given with regards to political developments, democracy, and good neighborly relations among Western Balkan countries.

In the regard of Kosovo’s political developments, were five respondents that believed religion has positively influenced political developments, and five others believed the opposite. Seven respondents believed religion has played a positive role in on good neighborly relations among Western Balkan countries, while five believed that religion has played a negative role. In terms of the role of religion on Kosovo’s democracy, eight of respondents believe religion has positively influenced Kosovo’s democracy, and seven others believed it has negatively influenced it. (Shehu, 2019) Almost half of the survey respondents believed that religion has played a neutral role in the aspect of the economic well-being of Kosovo. While five others believed that religion had a positive role and three others believed that it had a negative role.

Threats and opportunities for inter-religious relations in Kosovo

All the respondents participated on the survey were asked to list the top three threats to inter-religious relations in Kosovo. They gave a variety of answers but the most dominant threats that they saw to inter-religious relations were religious propaganda, the country’s struggling economy and the lack of opportunities hindering youth prospects. Religious extremism as well as the interplay of religion and politics was also listed as threats to inter-religious relations in Kosovo. Imported religious extremism remains an issue that countries all over the world are facing today. Respondents listed Arab countries, Serbia and Turkey as potential exporters of religious extremism in Kosovo. Religious communities in Kosovo are not officially recognized as legal entities and do not receive any funding from the state to carry out their religious activities, which they carry out through funds requested from other countries by religiously oriented NGOs. Islamophobia as well as unequal treatment of religions was listed as threat by some of the respondents. Although Kosovo is a country with a predominantly Muslim population, it suffers from Islamophobia. Despite widespread religious freedom, studies have shown that there is a stigmatization of religiously conservative believers, especially the Islamic community. Practicing believers are often prejudiced and stereotyped based on their point of view (for example because of Islamic dress). Respondents to the survey claimed through their responses that government is a generating factor of Islam phobia. Unequal treatment of religions is seen as a threat related to the dissatisfaction

of the Muslim Association of Kosovo and the Serbian Orthodox Church, which have accused the government of discriminating against their communities.

Citizens are optimistic about the role of religion and believe that it can have a positive impact on interethnic relations, social cohesion, peaceful coexistence and in good neighborly relations between the countries of the Western Balkans. According to them, this can only be achieved if the leaders of religious communities are actively involved in promoting moral values and work hard to strengthen interfaith cooperation and dialogue. They also think that religion can have a positive impact in terms of democracy. According to them, religion helps promote democratic values such as dialogue, justice, human rights and others. (Gallopini & Kamberi, 2017)

Serbia: Politics, Religion and National identity

The Christian faith has been present since the Roman period, in the territory that includes modern Serbia. With the spread of Christianity in the 2nd century, religious authority fluctuated between Rome and Constantinople, before Eastern Orthodoxy was founded in the late 9th century. Under the medieval Nemanic dynasty, the Serbian Orthodox Church achieved autocephalous status in 1219, and rise to a patriarchate in 1346. Islam was introduced to Serbia for the first time, with the Ottoman presence in the Balkans at the beginning of 14th century. Between 1804 and 1815, many Serbian uprisings took place against Ottoman rule in Serbia gaining autonomy under the rule of hereditary Serbian princes in 1830, and finally in complete independence in 1878. But in the southern parts of Serbia, remained small population, Slavic Muslims and Albanian Muslims.

During the communist regime when Serbia was part of the Socialist Federal Republic of Yugoslavia, religion was tolerated but it was discouraged, while the property of religious organizations was largely nationalized. The influence of socialist political ideology on religion in Serbia can be seen in the fact that data on religious affiliation were ignored for ideological and political reasons in the censuses of 1961, 1971 and 1981. The essential overlap between religious affiliation and ethnic identity played a major role. in the wars that followed the break-up of Yugoslavia in 1991, and continues to this day to some extent. This reflects the role of religion in creating an atmosphere of mutual intolerance between different nations in the Balkans, with the rise of nationalism reinforced by an increase in expressions of religious identity. This increase in the importance of religious identity in Serbia was also demonstrated by the establishment of the Serbian Ministry of Religion in 1991, which lasted until 2012. (Open School, 2019)

Church-state relations

According to Article 11 of the relevant Constitution, the Republic of Serbia is a secular state. Churches and religious communities are separate from the state and no religion can be established as a compulsory state or religion. The state law, drafted in 2006,

regulates churches as well as religious communities, giving special priority to seven religious groups that the government defines as "traditional." These are: The Serbian Orthodox Church, the Roman Catholic Church, the Slovak Evangelical Church, the Reformed Christian Church, the Evangelical Christian Church, the Islamic Community and the Jewish Community. According to this law, these seven traditional religious communities are exempted from taxes and the right to teach religion in public schools. In addition to these seven communities, there are twenty other religious communities and churches.

Religious composition of country

Statistical data collected about Serbian religious demographics are based on the 2011 census. These data do not contain information about Kosovo. The data for two municipalities on the border with Kosovo are not completed as a number of Albanian citizens refused to participate in this census. The majority of the Serb population was identified as Christian (91.22%), belonging to the main denominations - Eastern Orthodoxy, Roman Catholicism and various branches of Protestantism. The majority of citizens belong to the Serbian Orthodox Church (84.59%), while 4.97% identified it as Catholic (Open School, 2019). Most Roman Catholics live in the northern part of Serbia, Vojvodina. Referring again to the 2011 census, Muslims in Serbia resulted to represent 3.10% of the population. They are organized in two different communities, the Islamic Community of Serbia and the Islamic Community in Serbia. The first is headquartered in Belgrade and consists of three mufti units, while the second is located in the city of Novi Bazar, a Muslim-majority area and is under (the executive body) of Bosnia and Herzegovina. Traditional Protestant communities make up about 1%, mostly of the Slovak and Hungarian national minorities. More than 90% of Serbia's 36,000 Jews were killed during the Holocaust, and as a result the Jewish community now has less than 1,000 members.

Interfaith relations

Based on independent reports, the level of religious violence has declined in recent years, although it is difficult to determine whether a violent act was motivated by religion or ethnic identity. Interfaith relations are generally good in Serbia, but tensions continue between the Serbian Orthodox Church and other unknown Orthodox Churches - Montenegro and Macedonia, as well as divisions between the two Islamic communities. A major outbreak of religious violence occurred in 2004 when mosques in central Belgrade and Nis were quickly damaged following a series of attacks in Kosovo in which more than 36 Serbian Orthodox churches and monasteries were destroyed by Kosovo Albanian rebellions.

The situation remains very complex, as tensions between the Kosovo Albanian majority and the Serb population has not eased 20 years after the 1998–99 war. What makes the situation particularly difficult is that a considerable number of Serbian

Orthodox Church properties are located in the territory of Kosovo. (S/2004/348, 2004)

Serbia is one of the countries where religious beliefs especially orthodox one has had a lot of negative influence. The war with Kosovo proved that the faith influenced its further progress and continuation.

Politics and Religion in Montenegro

Referring to a survey dealt with the influence of religious leaders in their religious communities in Montenegro, respondents were asked to rate this on a 1–7 scale, where 1 stands for “no influence at all” and 7 marks “very influential”. When it came to the influence within their respective communities, the average was 4.72. With regard to the influence of religious leaders on broader public opinion, the average was a bit lower at 4.56. The difference between the two is not as large as in some other countries in the Western Balkans. Based on these survey results, it seems that religious leaders in Montenegro are influential to some extent in their respective communities as well as in public opinion too. (Zekavica, 2019)

The influence of religion on developments in Montenegro

Concerning the political developments, people mostly define religion as a negative factor in political developments, a smaller number did not see an effect of religion and only five saw a positive influence (two of were religious leaders), while three others marked that they do not know. The answers related to the development of democracy show similar results as well. Regarding interethnic relations showed that respondents tend to believe that religion does not affect the development of those relations; 44% of respondents saw religion as having a negative influence on the development of interethnic relations; with an additional 28% of respondents who claimed that religion has a positive impact. It is interesting to mention that religious leaders all saw the positive impact of religion on social cohesion. (Zekavica, 2019)

Religious tolerance

Concerning the issues of religious tolerance and inter-religious, respondents see inter-religious relations in a worse condition than they are in the Western Balkans as a whole. The average mark of the state of inter-religious relations was 3.92 according to asked respondents. When it comes to the present state of the inter-religious relations in the Western Balkans the results seem to point to slightly better relations.

North-Macedonia: The Challenges of Politics and Religion in multi Ethnic and multi Religious country

Northern Macedonia is a multi-ethnic and multi-religious country as well. Based on the 2002 census, the religious map is: 64.8% Orthodox Christians, 33.3% Muslims, 0.35% Catholics and 0.03% Protestants. (Office, 2002) This demographic map is different currently as the last census was in 2002, while the other has been announced

for 2021. According to a Brima/WIN-Gallup international survey, Balkan countries, with the exception of Bulgaria and Albania, remain in the group of the most religious countries in Europe, and Macedonia remains with 88% of religious citizens.

Concerning the issue on inter religious tolerance, the survey conducted by IPIS-Skopje in 2017 shows that citizens who belong to the two largest religions in Macedonia are religious and to a lesser or greater extent practice their faiths. (IPR, 2017) So high percentage of them have not any problem to communicate with members of other religions. This can be “translated” as a high degree of inter-religious tolerance in the country. The inter-religious tolerance and peaceful coexistence of different ethnic and religious groups in North Macedonia was recognized by Pope Francis when he made his first foreign visit.

The role of religion in North Macedonia

For the citizens of RNM, religion is very important. Based on a survey, has resulted that only 10.3% (of the respondents think that religion is to some extent not important, but 74.4% of the respondents consider religion as important. (IPR, 2017)

In the regard of the importance of religion in society, the respondents have responded that it is of great importance.

Inter-religious relations

Concerning the question about inter-religious relations in Republic of North Macedonia on a scale between religious hatred and religious harmony the majority of respondents think that inter-religious relations are somewhere in between, but slightly inclining towards inter-religious intolerance (41%), but none of the respondents think that the RNM is in a state of religious. The average grade for this question is 3.82, which confirms what has previously been stated. (IPR, 2017)

Respondents had a slightly different opinion in the regard of inter-religious relations in the broader region. They thought that religious hatred is generally present in Western Balkan region.

Respondents have stated as well that they do not expect changes in a near future there are no indications that religious leaders will change their behavior. They complain that there is no sufficient contact between different religious communities and that religious leaders who do not contribute in promoting inter-religious relations. A few of the respondents think that inter-religious relations will worsen due to an ethnic and religious gap which will increase because religious communities will still be under the influence of politics and that polarization between the people in North Macedonia after five years. Respondents’ answers on how they expect inter-religious relations to develop in Western Balkan countries in the next five years are less optimistic. They think that they will worsen, or they will remain the same. While only

about 10% of respondents think that inter-religious relations in the region will improve. (Borovska, 2019)

These pessimistic views are explained by the reasoning that there are still existing and active political issues among the Balkan countries. For this reason, they fear that different religious faiths in the Balkan countries divide people rather than unite them. Thus, political elites would not give up their tendency to abuse religious communities just to achieve their political goals.

Conclusion

The significance of religion persists in various aspects of society within the Western Balkan countries, demonstrating its impact on different fronts. While the tangible and positive effects of religion on economic, political, democratic, and social realms may not always be immediately apparent, there is immense potential for religious representatives to actively foster and promote religious values that contribute to the reconciliation and resolution of past conflicts faced by Western Balkan societies.

Furthermore, religious institutions have a pivotal role to play in society by actively embracing universal ethical principles and denouncing populist rhetoric that undermines democratic values. Although challenges exist due to the historical misuse of religion for political purposes in the Western Balkans, it is crucial to recognize the immense capacity for progress and the transformative power that religious leaders and institutions possess. It is noteworthy that religion remains a significant aspect of people's lives, and there is a collective call for religion, through its representatives, to be instrumental in fostering interfaith cooperation, understanding, respect, and tolerance. This places a vital responsibility on religious leaders in the Western Balkan countries to take proactive measures and initiatives that promote harmonious coexistence among different religious communities.

In summary, while acknowledging the complexities, religion in the Western Balkans presents a remarkable opportunity for positive change and societal development. Through active engagement and interfaith collaboration, religious representatives and institutions can contribute significantly to the betterment of the region and the realization of shared values.

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Zein Conjugates with Potential Controlled Drug Delivery Properties

Laura Darie-Ion

Faculty of Chemistry, Al. I. Cuza University of Iasi, Iasi, Romania

Aurel Pui

Center for Fundamental Research and Experimental Development in Translation
Medicine – TRANSCEND, Iasi, Romania

Brindusa Alina Petre

Abstract

Zein proteins belong to the class of prolamin proteins which, in maize, represent more than 60% of the total endosperm protein. Based on their molecular weight, sequence and solubility, zeins are classified into four different zein structures (α , β , γ , δ). Moreover, the most defining characteristic of zein proteins refers to their insolubility in water and their high solubility in aqueous high percentage alcoholic solutions, such as 65% ethanol to 95% ethanol. In addition, zeins extracted from maize flours have wide application in: (i) refining food products, such as candies and nuts; (ii) microspheres filled with pesticides are produced out of zein proteins for controlled release of the biologically active substances to provide a safer working environment; (iii) “zein films” are used as a controlled release matrix of active components, such as salicylic acid, lysozyme and EDTA; (iv) coating of tablets and in zein-coated chitosan /tripolyphosphate nanoparticles for oral delivery of selenite. We report here on an original and novel process, which consists in successive grinding and sieving of corn seeds to bring about different maize flours, with chemical compositions and protein contents depending on particle hardness. We have also investigated zein extraction using 65-95% aqueous ethanol under ultrasound conditions from dry-ground whole corn as well as meals with different grain sizes. Besides, the extracted zein and the commercial zein protein were used for different conjugates synthesis. Protein determination was made by UV-Vis spectrophotometry. We have applied modern methods such as MALDI ToF mass spectrometry and FT-IR spectroscopy to characterize the synthesized zein conjugates.

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Keywords: zein, extraction, conjugates, mass spectrometry, fourier transformed infrared spectroscopy.

Optimizing Project Management using Artificial Intelligence

Valma PRIFTI

Department of Production and Management, Faculty of Mechanical Engineering,
Polytechnic University of Tirana, Tirana, Albania

Abstract

This study focuses on identifying the weakest points of project management and the possibility of where artificial intelligence can help precisely in their optimization. The results were taken from a survey where project managers of various categories were asked about the main challenges facing management today and the points where artificial intelligence can be seen as a optimization tool. In this decade, artificial intelligence (AI) has undoubtedly been one of the most influential technologies. AI has changed the way people live and work, and project management is no exception. There is always controversy about the use of AI technology. In this paper first is explained the need for companies to use AI technology and after considering the advantages and risks of AI. Also using project management based on machine learning is the optimal option. Some proposals for the implementation of AI in project management are presented. The study describes how AI systems can support project managers to become more efficient in their work.

Keywords: Optimization, Technology, Management, Project Management, Artificial Intelligence.

1. Introduction

This paper studies the role of artificial intelligence in project management including its application in project management while listing the benefits of AI integration in project management. In addition, this paper examines how AI facilitates excellence in project management. Various industries are using technology with a view to improve efficiency and effectiveness, while enabling management to be reliable, secure, and accepting. The integration of human skills and technical systems has resulted in increased performance and motivated culture thus ensuring continuous improvement. AI has various tools including Chatbots, Strategos, ZiveBox, Rescoper, ClickUp, Clarizen and PolyOne which help project managers in handling various tasks. For example, they assist the manager in the composition of the project team, as well as in assigning roles and responsibilities to individual team members. AI tools are also

useful to ensure that project managers manage effectively and adhere to deadlines. There are many benefits that project managers get from using artificial intelligence. First, AI provides support for project managers. This is because it eases the burden and pressure of project management through the application of machinery. AI is also useful in providing project managers with the accuracy of results as the tasks performed using AI have no errors. Furthermore, the use of AI helps project managers with insight and strategy. For example, an AI tool can suggest alternative or additional steps for project managers who are handling very difficult projects. In addition to assisting project managers in performing the above tasks, it also increases effectiveness and efficiency, thus increasing the product manager's productivity by increasing their creativity while increasing their emotional intelligence.

2. Project Management And Elements Of Project Management Phases

A formal definition of project management, based on the Institute of Project Management, defines the term as: "the application of knowledge, skills, tools and techniques to project activities to meet project requirements." A more tangible description is that project management is all you need to realize a project on time and within budget to provide the necessary scope and quality. Project management involves making decisions about the planning, organization, coordination, monitoring and control of a number of related activities in a timely manner. A project manager must make an exchange between cost, time and scope while ensuring the required quality. The Project Manager, therefore, often depends on tools and techniques that are quite effective not only in designing the best possible initial plan, but also capable of instantly projecting the impact of deviations to initiate the necessary corrective measures. The table presents the project management phases.

Table. 1. Elements of project management phases

Start	Planning	Organizational	Control	Completion
1. Definition of the problem 2. Identification of project goals 3. Specification of goals 4. Determination of preliminary resources 5. Identify opportunities and risks	1. Identification of project activities 2. Evaluation of time and expenses 3. Flow of project activities 4. Identification of critical activities 5. Compilation of the project proposal	1. Determining staffing needs 2. Recruitment of the project manager 3. Recruitment of the project team 4. Organizing the project team 5. Assignment of tasks	1. Define management style 2. Organization of control 3. Preparation of the status report 4. Review of the project plan 5. Changes	1. Acceptance of the project by the customer 2. Distribution of the project 3. Distribution of documentation 4. Preparation of the final report 5. Implementation audit

3. Artificial Intelligence And Project Management

Artificial intelligence (AI), the ability of a computer or computer-controlled robot to perform tasks typically associated with intelligent beings. The term is often applied to the project of developing systems endowed with intellectual processes characteristic of humans, such as the ability to think, discover meaning, generalize, or learn from past experience. Since the development of the computer in the 1940s, it has been demonstrated that computers can be programmed to perform quite complex tasks, such as discovering evidence for mathematical theorems or playing chess, with great skill. Still, despite continuous advances in computer processing speed and memory capacity, there are still no programs that can meet human flexibility over broader fields or tasks that require much daily knowledge. On the other hand, some programs have reached the performance levels of human experts and professionals in performing certain specific tasks, so that artificial intelligence in this limited sense is found in various applications such as medical diagnostics, computer search engines and voice recognition. or handwriting. The term "artificial intelligence" has been misused and misunderstood. While for many the term AI means a conscious robot, which wants to destroy humanity; experts refer to this specific instance of AI as

general artificial intelligence which is a long way to go in the future. However, there are other cases of AI used for better or worse in areas such as medicine, war, finance, espionage, etc. In relation to the field of project management, machines can copy cognitive functions related to the mind of the project manager such as decision making and problem solving. Various search engines and word recognition systems including Google and Siri among others use AI principles in performing their functions (Lahmann, Keizer, et al., 2018). However, the overall goal of AI is to develop computers and machines that are able to work in the best possible way (Vesma, 2009). This includes the use of optimization strategies, automation intelligence, and mathematical methodologies. Based on (Munir, 2019), programming AI strategies requires technological interpretation in addition to interpretation of psychology, neuroscience, and linguistics. Regarding AI implementation, being able to accurately determine the minds of project managers in a way that allows simulation using the techniques mentioned above remains controversial. This will be possible over time and the opportunity is increasing due to the development and use of microcomputers, the advancement of machine learning technology and the use of cloud computing (Duchessi et al., 1993). The current study analyzes how AI is beneficial to project managers.

Technological field is dynamic and there is a lot of development in the field of project management. Given the importance of the tasks performed by project managers, it is important that such tasks are performed efficiently and effectively (Vesma, 2009). With technological advancement, several technological innovations have been developed to assist project managers in this regard based on (Anastasi et al., 2011). As such, this study aims to analyze how AI helps managers.

3.1 Assistance to project managers

There have been several AI applications that have been developed with a view to facilitating the work of project managers. This has resulted in new competitive constraints, which when combined with contemporary constraints complicate the exchange analysis process. Hiring various AI tools by project managers is expected to make project management easier. According to (McCarthy, 2007), the limitations and assumptions given to the project team at the beginning of the project do not change within the project life cycle is always taken for granted. This has been proven wrong ever since and all limitations and traces of assumptions should occur throughout the project life cycle, and this is where AI finds added use (Abduh & Soemardi, 2002). For example, managers are not always aware of when they may interfere with project implementation. Some of the AI tools used by most organizations include crisis panels. By observing the computer crisis panel, managers are able to identify projects that face various issues and which of the project constraints are not within the required level and projects that can be considered to be at the critical level (Tonchia, 2018).

Using AI, managers are able to identify projects that need immediate action and the specific actions that project managers need to take. This is essential in significantly reducing response time to project issues identified to be outside acceptable limits. It can be difficult for managers to determine the amount of work to be done or planned without having work restrictions. Extra work is usually done overtime regardless of technological requirements, skill requirements, and resource constraints without AI (Andrea Edkins, 2017). AI helps assist in project portfolio development that increases project probability of increasing value for the organization in addition to identifying effective resource management practices. It is worth noting that several software algorithms have been developed for this purpose (Salini et al., 2015). However, project scheduling and optimization practices remain manual and use trial and error strategies. Based on (Magaña Martínez & Fernandez-Rodriguez, 2015), the use of AI in project management helps to improve the effectiveness of schedule optimization by identifying all current and future projects of the organization in progress, compared to consideration only of a few specific projects. This assumes that everything is generally wrong or true in making assumptions. With the use of more information, some assumptions will be made.

AI utilizes sufficient database related to specific information and thus enhances problem solving and reasoning based on partial information (Butt, 2018). AI enables forecasts for the future, while offering opportunities that increase the value of decisions made. Using different AI tools with more information results in better decision results according to (Schreck et al., 2018). This requires consolidating the intellectual property of project management and obtaining information about AI tools as a starting point. Such tools include hatbots, Strategos, ZiveBox, Rescoper, ClickUp, Clarizen and PolyOne. The United States Patent and Trademark Office (USPTO) has issued a growing number of patents for AI inventions, proving that AI's innovative capabilities will revolutionize our industries and impact the global economy.

4. Risks and limitations of AI in Project Management.

Technologies are increasingly improving productivity, profitability, and business results, but there are also certain barriers and limitations to be taken care of. The main dimensions of risks according to studies are:

Table. 2. Risks and limitations of AI in Project Management

Risk dimension	Description	Impact on MP
Safety	AI technology may not follow the company's security standards.	Depending on the desired output of the project, AI may endanger the safety of human beings.
Privacy	AI cannot properly distinguish between approved and restricted data and violates the right to privacy	This can encourage the collection of personal data, unauthorized registrations and unethical decisions.
Autonomy	As AI dominates the environment, it can make people feel like "slaves" of the car.	AI at some point becomes independent, which makes Project Managers lose track of how and when to stop AI.
Data quality/availability	Incomplete and missing data reflect the statistical power of a forecast and produce estimates that lead to invalid conclusions.	Managing a group of stakeholders and various unpredictable events, AI-led projects will generally not respond appropriately to these challenges.
Employment	Repetitive and low-skilled jobs may no longer be available.	AI may not be competent to assign a task to the right person as it lacks people and social skills

A major obstacle to AI adoption is the skills shortage and availability of experienced technical staff and training to deploy and operate AI solutions.

1. Data mismatch: exists where data sources conflict with each other at the data value level because the same data exists in different formats in multiple tables. Well-designed and well-controlled project management environment, missing or

incomplete data occurs in almost all areas. Incomplete data can reduce the statistical power of a forecast and produce estimates that lead to invalid conclusions.

2. Creativity: Machines simply do not have the ability to be creative. People can think and feel, so decision making is creative and will benefit from the result. AI can help in terms of helping to determine the type of images with the style and the possible price of the client preference. But a machine can not yet compete with the human brain when it comes to originality. AI can be trained in some creativity parameters which can develop their sense of creativity

3. Hiring and retaining: Since the field is quite new in the field of project management, companies may need to invest in raising the level of their employees to meet the demands and challenges of this new way of project management.

5. Case study of project management and artificial intelligence

The first step in this research process was done using a survey which was distributed online to project managers. In this survey, the questions were divided into two categories:

1. Project Management
2. Artificial Intelligence

The survey was conducted among project managers in various enterprises mainly in various IT and telecommunication companies belonging to the most evolutionary industry of the moment to thus understand a broader perspective. The nature of the questions in the survey was defined in a wide range for project managers, some asking them to answer Yes / No, some enabling multiple choice options. The survey results were then used to identify trends in this industry. This section presents the survey results. The survey was answered by a total of 34 respondents with experience in project management in various fields from different businesses. One of the first questions (with Yes / No answer) was about defining AI systems awareness among project managers and the answer is illustrated below:

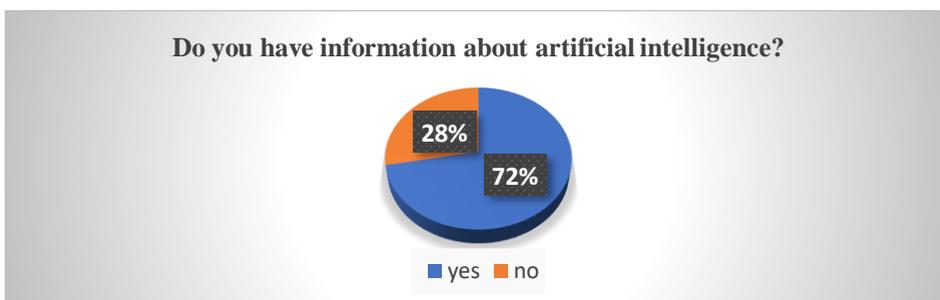


Figure. 1. Information about artificial intelligence

This statistical breakdown got an interesting change as shown in the figure below when project managers were asked if they use any AI system:

Examining the data from the answers to the two questions from the graphs it was found that out of 72% of respondents who have knowledge of AI, 12% use AI systems while 61% of project managers do not use any.

Further respondents who do not use any AI system were asked if they would like to use any AI system in the future and their answer is illustrated in the graph below:

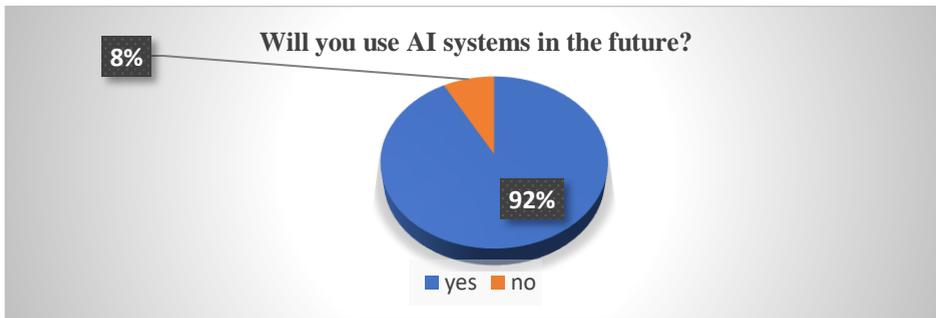


Figure. 2. Preferences to use AI in the future

In this section managers were asked about their experience in the field of project management and their answers are presented in the graph below.



Figure. 3. Experience in Project Management

It turns out that 5 managers have less experience in the field of project management, 9 others have an average experience of 5-9 years. Most result that they have a relatively large experience of 10 years, while 4 had 15 years and 20 years had only 3 of them. 70% of respondents were IT project managers, without question this is justified by the fact that it is the most revolutionary industry of the moment. The remaining 18% and 12% respectively dealt with industrial projects and services. Based on the results it is concluded that the main challenges for project managers are risk management, project planning, budget and quality management. It usually

happens that these are the weakest points in management because many factors influence. I would emphasize the fact that exactly at the weakest points of management, AI would intervene in their optimization. They are exactly the budget, project planning, risk management, quality management where Artificial Intelligence would provide support.

6. Conclusions and discussions

This paper concludes that this is the era of technological progress. Technological advancement has led to the development of big data science that uses AI as its backbone. AI is defined as a device that helps to realize different perceptions about the environment, while helping to take actions that increase the probability of achieving goals. Various fields are now applying AI.

However, the field of project management is particularly experiencing an increased AI adoption. In this regard, AI is helping to manage different projects at the same time using the limited resources available. As such, it can be concluded that AI helps project managers in many ways using different tools to perform tasks. different. Thus, AI means increasing project manager support, increasing accuracy, strategy and insight. The use of AI in project management has increased the productivity of project managers. AI has also increased the emotional intelligence and creativity of project managers by eliminating individual biases in decision making. Centrally, there are various risks that have resulted from the adoption of AI in project management. AI in project management does not replace people. Project managers are very important. However, it can be a powerful tool for a project manager who can increase productivity.

The computer analyzes all the data and finds patterns which help it to make a more accurate prediction. The analysis of the survey results reveals some more problematic aspects in project management and for which artificial intelligence systems would help in their optimization. In the future the attention should be focused on these challenges and how to solve them.

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Importance of Bioactive Compounds of *Ganoderma lucidum* Extract in Medical Field

Carolina Pascale

University of Medicine and Pharmacy Carol Davila, Bucharest, Romania,

Rodica Sirbu

University of Medicine and Pharmacy Carol Davila, Bucharest, Romania,

Emin Cadar

Ovidius University of Constanta, Faculty of Pharmacy, Romania,

Abstract

Ganoderma lucidum is a well-known medicinal mushroom with a long history, used as an ancient remedy for promoting health and increasing longevity. This species of *Ganoderma* genus is important for our study because it has an interesting chemical composition and pharmacological benefits such as immune suppressor, hypocholesterolaemia, hypotensive, antitumoral, antioxidant, anti-inflammatory agents, and more others. *G. lucidum* chemical composition has many compounds such as vitamins (mainly Vitamin E), polysaccharides, triterpenes and each one of them is offering a distinctive pharmacological effect. This species of *Ganoderma* medicinal mushroom is used extensively for its internal effect on improving immune system, hepatoprotective benefit and additionally, a large variety of people consume *Ganoderma lucidum* as tea infusion and coffee because its antioxidant and reducing stress effects.

Keywords: *Ganoderma lucidum*, antitumoral, polysaccharides, anti-inflammatory, antioxidant.

Introduction

Ganoderma lucidum (*G. lucidum*) is the most known medicinal fungus due to its impressive natural ingredients. Its pharmacological application dates back nearly two thousand years ago [1] and it is known as Lingzhi from Chinese population and as Reishi in Japan [2].

G. lucidum is known as basidiomycete and according to Li, has been called as the "Mushroom of Immortality" [1]. This mushroom has been used in China for healing purpose and has been predominantly used by Asian population for an alternative of chemotherapy treatment to inhibit cancer or to handle side-effects from

chemotherapy medicine [3]. Nowadays, usage of this fungus increased because its potential of reducing obesity, cholesterol, for gout health, decreasing cardiovascular disorders, controlling the diabetes and other metabolic diseases, stimulation of probiotics [4].

William Curtis was a researcher who discovered *Ganoderma lucidum* in 1781 based on grown material in England [2]. According to Moncalvo 1995, in that time confusions were wide between *Ganoderma tsugae* and *Ganoderma lucidum* because of chlamydospore production regarding the distinction of both species. European *G. lucidum* does not produce ovoid chlamydospore like *G. tsugae*, but an interesting fact is American *G. lucidum* produces ovoid chlamydospore. Many other species have been researched and beside these, Adaskaveg 1989 reported that North American *G. lucidum* and European *G. resinaceum* belong to the same species, but Moncalvo 1995 hasn't reported any evidence of these [5].

Work by Sun (2014) clarify difficulties associated with the separation and identification of polysaccharides from *Ganoderma* spp. and settle a high-performance liquid chromatography (HPLC) based methodology to characterise species from *Ganoderma* genus using polysaccharide fingerprint profiling [6].

Such as *Ganoderma* polysaccharides, many other papers were published to value triterpenes, especially Ganoderic Acids, to differentiate between *Ganoderma* species. A study released by Chen 1999 shows a method of analysis of triterpenoids to differentiate between *G. tsugae* and *G. lucidum* [7].

Even though it has a variety of components, polysaccharides and triterpenoids are the most important compounds from this fungus and some authors consider it being responsible for the most of its pharmacological activity [8].

Over the years, *G. lucidum* defines its potential due to its largely acceptance of the population and usage of it for many human conditions. Nowadays, it is known that this fungus has numerous pharmacological effects such as: immunomodulating, anti-atherosclerotic, anti-inflammatory, analgesic, chemo preventive, anti-tumor, radio-protective, sleep-promoting, antibacterial, antiviral, hepatoprotective, anti-diabetic, anti-aging, antioxidative, hypoglycaemic [9].

A study published by Gerenutti et al. 2021, shows an *in vitro* activity of *G. lucidum*, used for evaluation of antitumor, immunomodulatory, antioxidant, neuronal cell protection, antifungal, and antimicrobial activity. Based on author's research in literature, all authors reported *in vitro* antitumoral activity, positive effect of *G. lucidum* extract on immunomodulation, antioxidant activity of the extract, benefits as adjuvant in neurodegenerative diseases, antimutagenic activity of the extract of the body and the mycelia of *G. lucidum* [10].

It is known that the common way to administrate this supplement is oral, but dosage and posology varies from person to person. Searching in literature, *in vivo* tests aren't

so common. So, based on Gerenutti et al. 2021 work, are related some interesting in vivo activity for *Ganoderma lucidum* extract. And these are: evidence-based antitumoral activity against breast cancer, lung cancer, leukemia; testosterone inhibition activity with the result of reducing the malignancy of prostate cancer; protection against idiosyncrasies side effects induced by antitumoral agents and, protection against radiotherapy; hepatoprotective effect was also reported after drug induced hepatotoxicity [10].

Materials and Methods

G. lucidum is found all over the world, growing on multiple hosts. In Europe, it grows on living trees or stumps of oaks or chestnuts, rarely on coniferous trees [11]. The study area is Sub Carpati Region of the Romanian montain chain. We choose this surface in order to contibuite at the development of wild products in the region of Romania and their use in the medical field.

Botanical description

This species belongs to kingdom Fungi, phyla Basidiomycota, Class Agaricomycetes, Order Polyporales, Family Ganodermataceae, Genus Ganoderma and Species *Ganoderma lucidum* [10]. Fungus of this Genus have a shiny surface that is associated with the presence of thickwalled pilocystida embedded in an extracellular melanin matrix [12]. *Ganoderma* is characterised due to its shape and exceptional colors (red, black, blue, white, yellow, purple) of the fruiting body. These characteristics differ between species due to their geographical origins and cultivation environments [13].



Figure 1. *Ganoderma lucidum*

General methods for obtaining composition data

The standard AOAC International (Association of Official Analytical Chemists) (2016) procedures were applied in order to determinate carbohydrates, proteins, lipids and

ash. The Kjeldahl method of protein estimation was applied based on the calculation of total N (Azote). Total lipid content was made by Soxhlet extracting method with petroleum ether. The ash content was determined gravimetrically after incineration at $600 \pm 15^\circ\text{C}$. The carbohydrate content was determined by calculation. The NaCl content was determined by the Mohr method with the modifications made by Taofiq et al. (2017) [14].

***G. lucidum* ethanolic extract**

A simple method of extraction using ethanol is described by Taofiq [14]. The dried powder of *G. lucidum* (3g) was extracted in Soxhlet apparatus for 5-6h (35 ± 5 min/cycle) using ethanol. In the end of this procedure, the final solvent was evaporated under reduced pressure to obtain the dried ethanolic extracts. In addition, to characterise phenolic and triterpenoid compounds, the obtained extracts were dissolved in ethanol (5.5 mg/mL), followed by a filtration through $0.22 \mu\text{m}$ nylon syringe filter and analysed by high performance liquid chromatography equipped with photodiode array detection-mass (HPLC-DAD-ESI/MSn). Alongside with characterising these two bioactive compounds, antioxidant, antityrosinase, anti-inflammatory, antimicrobial activity, and cytotoxicity in human tumour cell or in non-tumour cells lines can start being analysed with this ethanolic extract method, according to Taofiq [14].

Extraction of polysaccharides

A method that determinate the total polysaccharides from *G. lucidum* sample is described by Taofiq, with some modifications of Vazirian et al. 2014, method. Shortly, method is based on the dry sample (1.5 g) extracted by maceration with boiling water and then filtered under vacuum. In addition, this step was repeated twice. Next, filtered extract was lyophilized and fraction of polysaccharide is dissolved in water at a concentration of 5mg/mL. To the obtained solution (1mL), phenol (4%, $25\mu\text{L}$) is added, followed by sulphuric acid (1mL). The final solution is stirred for 30 seconds and then measured using a UV-VIS spectrophotometer, absorbance is read at 548 nm against a blank solution (distilled water). This method uses Starch ($5-50 \mu\text{g/mL}$) as a standard and results are expressed in mg of starch equivalents per g of dw (dry weight) [14].

Extraction of triterpenoids

Nowadays, even the technology arises, for terpenoids, remain these two classical methods of extraction. Colorimetric method using vanillin-perchloric acid spectroscopic method, which can be estimated the total triterpenoids content, and the other one with determining individual triterpenoids using high-performance liquid chromatography (HPLC) or thin layer chromatography (TLC). For both methods, many authors reported severe conditions of high temperature and strong acid and these methods are considered destructive methods. According to Chen 2012, near

infrared (NIR) spectroscopy offer some advantages such as high efficiency, low cost, easy operation, less or no sample preparation and quick data analysis [15].

Results and Discussions

Ganoderma lucidum is a type of medicinal mushroom full of bioactive compounds. In addition to the mainly compounds, there are other biological components of pharmaceutical interest, such as: fat, proteins, ash, carbohydrates, and sodium chloride that are presented in Table 1.

Table 1. Chemical composition of *Ganoderma lucidum*

Component	Mean \pm SD (g/100 g)
Lipids	2.85 \pm 0.03
Proteins	7.85 \pm 0.05
Ash	2.1 \pm 0.15
Total carbohydrates	86.64 \pm 0.2
NaCl	0.56 \pm 0.04

Ganoderma lucidum ethanolic extract reveals tyrosinase activity through the compound Ganodermanondiol which suppresses the expression of tyrosinase-related activity (TRP-1, TRP-2) and microphthalmia-associated transcription factor (MITF) thereby inhibiting the synthesis of melanin. In this case, tyrosinase inhibitors contribute to skin lightening and with the help of another existent compound in the fungus, phenolic acids, reduce the severity of hyperpigmentation and decrease melanin biosynthesis. The extract has also showed anti-inflammatory activity by inhibiting NO production and at this activity phenolic acids and triterpenic acids such as, Ganoderic Acid C1 and Lanostane are contributing to its anti-inflammatory activity. Antitumor activity is present, and also high antibacterial activity against methicillin-resistant *Staphylococcus aureus* (MSSA) and methicillin-sensitive *Staphylococcus aureus* (MRSA) [14].

Polysaccharides from *G. lucidum*

For so long, a lot of scientific attention has been focused on polysaccharides from the *Ganoderma* spp. In fact, polysaccharides represent biological macromolecules with a complex structure of elements and a wide range of physicochemical properties [14]. The content in polysaccharides was 15.4 \pm 0.2 mg starch/g, reported by Taofiq [14].

The most important beneficial function of oligosaccharides in human body are: doesn't stimulate or increase the level of blood glucose, decrease the absorption of released

glucose; provide small amount of energy, improve the intestinal environment and maintain intestinal tract's health as probiotic.

Polysaccharides from *Ganoderma* spp. have a good antioxidant effect due to its potential of reducing damage, caused by the free radicals formed in the oxidation reaction. Polysaccharides act as anti-diabetic agents with the result of lowering blood glucose. Beside these functions, this bioactive compound possesses inhibitive effect on the tumour growth and enhance proliferation of macrophage cells in the immune system as a result of antitumoral agent against breast cancer [17].

Triterpenoids from *G. lucidum*

Studies have shown that over 150 triterpenoids were found in *Ganoderma* spp. and these are: ganoderic, lucidenic, ganodermic, ganoderenic, ganolucidic and applanoxidic acids, lucidones, ganoderals and ganoderols. The content of Triterpenoids reported by Taofiq was 27.2 ± 0.7 mg ursolic acid/g and in Terpenoids was 27.2 ± 0.7 mg linalool/g [14].

Naturally, triterpenoids are a subtype of Terpene composed of one or more isoprene units. Triterpenes isolated from *G. lucidum* spores have shown significantly pharmaceutical activity against many human disorders, including cancer. Studies have shown that Ganoderic acid T, D, F provide strong cytotoxic effects at low concentrations in various human cancer cell lines. Anti-inflammatory and antioxidant properties possess remarkable pharmacological activities [15].

Regarding the benefits of bioactive components, it is known that the antitumoral effect is mostly given by β -glucans from polysaccharides. But its also worth to mention the other important bioactive component, triterpenoid which provides antitumor effect. Beside it's widely discussed and studied effect, this compound also provides antioxidant and immounomodulatory effects, proved by in vitro and in vivo studies.

Table 2. Therapeutic effects and bioactive compounds of *Ganoderma lucidum* reported in literature

Pharmacological effect	Bioactive compound	References
Immunomodulating effect	Ganoderic acids	[18]
Antitumoral, Chemo preventive, Radio preventive effects	β -D-glucans, Heteropolysaccharides, Glycoproteins.	[18][19]
Anti-HIV effect	Triterpenoids	[20]
Anti-diabetic effect	Glycans	[21]
Hepatoprotective effect	Ganoderic acids	[22]
Antiinflammatory effect	Ganoderic acids	[23]
Anti-allergic effect	Ganoderic acids	[23]

These days, *Ganoderma lucidum* and not just this species, are consumed by population almost everyday. Its usage as nutraceutical and pharmaceutical formulation increased its popularity among researchers and of course, pharmaceutical companies. Based on this popularization, it become very popular between Americans and Europeans. The “Mushroom of Immortality” [1] has been utilized as herbal extract like tea infusion and as tonic, known from Traditional Chinese Medicine (TCM), and also as an alternative treatment of neurasthenia, hypertension, diabetes, liver diseases, arthritis, bronchitis, asthma, fatigue, coughing, insomnia, and many other. Is widely used for promoting human vitality and longevity based on TCM medicine.

Nowadays, *G. lucidum* has been recognized as an alternative treatment in the prevention and treatment of leukimia, carcinoma, hearth disease, immune system enhancer, detoxify effect [9][24]. Now, there are more then a hundred brands of different products based on *G. lucidum* that can be found in the market all over the world [5]. Commercially products available are: hydroalcohol extract, dry extract capsules (different dosages), dried extract tablets (different dosages), spore powder (capsules of 100mg). However, there are still no coneret reports about its safety in pregnancy, lactation, or administration in children. In addition to the commercially available forms, various extracts of *Ganoderma lucidum* are also found in the form of coffee, powder, tea, spore products, drinks, syrup, toothpaste, soaps, and lotions [10].

Conclusions

G. lucidum is considered a very potential medicinal fungus due to the large pharmacologically bioactive compounds obtained from the fruiting body, spores, and mycelium. Our study highlights a wide variety of biochemically active compounds. The high content of terpenes, polysaccharides and triterpenoids is noteworthy. The second part of the study highlights the pharmacological effects of this fungus that have been used in Traditional Chinese Medicine, but it is also use in recent modern studies.

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Antioxidant and antibacterial potential of *Ulva lactuca* species from Romanian Black Sea Coast

Emin Cadar

Ovidius University of Constanta, Faculty of Pharmacy, Capitan Aviator Al. Serbanescu Street, No. 6, Campus, Corp C, Constanta, 900470, Romania

Ticuta Negreanu-Pirjol

Ovidius University of Constanta, Faculty of Pharmacy, Capitan Aviator Al. Serbanescu Street, No. 6, Campus, Corp C, Constanta, 900470, Romania

Bogdan-Stefan Negreanu-Pirjol

Ovidius University of Constanta, Faculty of Pharmacy, Capitan Aviator Al. Serbanescu Street, No. 6, Campus, Corp C, Constanta, 900470, Romania

Abstract

Green algae biomass represents an important natural resource found in marine environments which could offer new applications in the pharmaceutical and cosmeceutical industries. The paper aim was to characterize some fluid extracts of *Ulva lactuca* L. green macroalgae species, in the Ulvaceae family, from Romanian Black Sea Coast, through physical, chemical and biological methods. For biomedical applications it is important to study how the difference between the marine environment specific conditions, from which they are harvested, can influence the chemical composition of macroalgae. Another important aspect which could affect the bioactive green macroalgae extracts composition, is the influence of applied extraction method. In this way, the less destructive cold maceration method in different solvent concentrations was chosen, according with literature data. The extracts have been studied in order to determine total polyphenols content, total antioxidant capacity by photochemiluminescence method and antibacterial activity. The results emphasized an antioxidant and antibacterial activity of the studied macroalgae extracts, which can be improved in mixture with other bioactive natural substances, in order to obtain new pharmaceutical preparations for topical applications. The valuable obtained results offer the possibility to propose this natural resource for next studies as biomaterial in tissue engineering, wound dressing and drug delivery systems. We consider that *Ulva lactuca* L. green macroalgae species of Romanian Black Sea Coast, could be an important source of marine bioactive compounds with various uses in the biomedical field.

Keywords: *Ulva lactuca* L., bioactive compounds, antioxidant capacity, antibacterial activity

Introduction

Marine algae serve as a large part of the phytoplankton found in various marine environments of the world. Macroalgae represent, macroscopic algae with increased growth rate, which can be found in various areas and have relatively low use of fresh water [1]. Interest in algal biotechnology has been on the rise in recent times, especially on the production of various macroalgae species, used in the food, medical, cosmetic and pharmaceutical industries. Of significant importance is the increased global production of seaweeds in the last few decades [2]. In data literature, there are multiple studies conducted on *Ulva lactuca* L., which grows in the waters of seas and oceans [3], [4].



(a)



(b)

(b)

Fig. 1 (a, b). *Ulva lactuca* L. green macroalgae species

Ulva lactuca L., popular known as *sea lettuce*, see Fig. 1, represents a green macroalgae which belongs to the Chlorophyta Phylum, as described by Linnaeus in the 17th century [5]. It can be found connected, sessile or floating, in various marine environments and it is widespread on the Romanian Black Sea shore. *Ulva lactuca* L. presents polymorphism which led to the assumption, that different species exist depending on the environment. Linnaeus was the first one to discover that *Ulva lactuca* L. presents different phenotypes with a tubular form tail. Taxonomists from the 19th century believed that green algae with tubular tail represent a completely different genus called *Enteromorpha*. In time though, different studies of genetic analysis showed that diverse phenotypes were not linked to genetic variations, so there is no real evidence to support the existence of species other than *Ulva lactuca* L. [6]. Literature still describes distinct *Ulva* species, but reproduction among these

species has been demonstrated and therefore they can only be described from now on as *Ulva lactuca* L. variants.

An increased number of studies emphasize marine habitats and other factors such as water temperature or marine pollutants can influence the chemical composition of marine algae. The study of macroalgae increased in interest due to their role of bioindicators [7], [8]. They represent markers that can highlight negative changes in marine ecosystems due to the accumulation of different pollutant agents in their thallus [9]. *Ulva lactuca* L. predominantly invades and blooms near beaches, where it can affect tourism and damage marine ecosystems. The acidic vapors and biodegradation can induce animal deaths and possibly human deaths, due to *Ulva lactuca* L. large quantities degradation [10]. *Ulva lactuca* L. blooms have been reported all over the world, but the biggest event in the world so far was the green tide from the Yellow Sea for ten consecutive years which covers approximately 10% of the whole Yellow Sea surface [11]. In Romania, the South-east coast of the Black Sea, near Constanta and Mangalia cities reported the biggest *Ulva lactuca* L. blooms.

The Romanian Black Sea coast offers great possibilities for harvesting *Ulva lactuca* L., which can be found in significant numbers near the shore and at low depths. *Ulva lactuca* L. is an edible green seaweed with no threats to human health, traditionally consumed in various Asian countries but also approved in Europe [12].

Ulva lactuca L. consists of various natural compounds that can be utilized in many areas like pharmaceutical, cosmetical, chemical, energy or food sector. Seaweed composition includes soluble and insoluble dietary fibers together with minerals, polysaccharides, vitamins, chlorophylls, proteins. The integral use of the plant can represent a more profitable approach in order to utilize all the different constituents that *Ulva lactuca* L. possesses [13], [14].

In the last thirty years, medicinal plants practice has become a major trend worldwide, as the analysis of algae, plant extracts and natural products has shown that green algae represent a potential source of antibacterial activity. Traditional compounds face crises due to the rapidly growing resistance of bacteria, e.g. *Staphylococcus aureus*. Unlike chemicals, herbs are considered non-toxic due to their natural origin and long-term use as folk medicine. In this paper we present the results obtained regarding the antioxidant and antibacterial activity evaluation of this common green macroalgae species present along Romanian Black Sea Coast.

Materials and methods

The analyzed samples consist of green algae species *Ulva lactuca* L., class Ulvophyceae, order Ulvales, family Ulvaceae. The vegetal material was obtained from Romanian Black Sea shore, from four different zones: Vadu, Constanta (the highest macrophyte seaweed area), Mamaia and Navodari, Constanta County, Romania, in the August - October 2021 period. The marine algae collected samples were processed by

washing thoroughly with tap water and drying the harvested vegetal material, at room temperature, on metal sieves, 25 ± 2 °C, for 24 hours, followed by drying at 40 °C in oven with natural convection and grinded in an electric grinder to a fine powder.

Analysis methods were used in accordance to phytochemical, physico-chemical and pharmacognostical studies in literature data. Studies and experiments were made in the laboratories of Ovidius University of Constanta, Faculty of Pharmacy.

The chemical composition was explored in order to identify and classify the classes of compounds that support the physical-chemical and biological characteristics of the samples in comparison with the literature data [3].

Three types of extracts were obtained on using distinct solvents and different reactions for identifying the presence of important active principles of pharmaceutical interest, as Table 1.

For chemical compounds identification of the three extracts, they were analysed separately, using methods fit for the physical and chemical properties for each group of active principles [3].

Table 1. Type of methods and specific reactions used in farmacognostic study [3]

Type of extractive solution	Reaction/Method utilised
Etheric extractive solution (A)	Fluorescent UV ($\lambda=365\text{nm}$) and Lieberman-Burchard
Alcoholic extractive solution (B)	Fehling reaction, Borntrager reaction and UV method ($\lambda = 365 \text{ nm}$), Iron Chlorure reaction, Liebermann Bourchard reaction
Water extractive solution (C)	Fehling reaction, reaction with H_2SO_4 conc. and tymol, Foaming reaction and reaction with FeCl_3

Total phenolic content determination and pigments chemical composition

Total phenolic content determination (TPC): Total phenols present in *Ulva lactuca* L.

samples were determined UV-Vis spectrophotometrically, applying Folin-Ciocalteu reagent as stated by Singleton et al. [15]. Absorbance was determined at 760 nm in comparison to the calibration curve of gallic acid.

Total chlorophylls determination (T-Ch): We homogenized three grams of *Ulva lactuca* samples in acetone (30 mL, 80%) and incubated over the night, to protect it from sunlight, at 4 °C in order to obtain a complete extraction followed by centrifugation at

10,000 xg for 5 min. Total chlorophyll (T-Chl), chlorophyll *a* (Chl *a*) and chlorophyll *b* (Chl *b*) found inside the supernatant were measured UV-Vis spectrophotometrically at 664 nm wavelength, in accordance to Lichtenthaler and Buschmann method [16].

Total carotenoids determination (TCAR): Total carotenoids were determined UV-Vis spectrophotometrically at 450 nm wavelength, in accordance to AOAC [17]. β -carotene was utilised as a standard.

Antioxidant activity

Algae fluid extracts were obtained using two different methods, cold maceration and Soxhlet method, see Fig. 2.

Sample preparation - The vegetal product has been made into fluid extracts using as solvents, ethyl alcohol 50% and 70% concentration, using two common extraction methods:

Cold maceration for variable concentrations of vegetal product, 2.5 g, 5.0 g, respectively 10 g in 100 mL, both ethyl alcohol 50% and 70% concentration, for 12 days at darkness, room temperature, periodic stirring.

Soxhlet extraction for three hours refluxing for variable concentrations of vegetal product, 2.5 g, 5.0 g, respectively 10 g in 150 mL ethyl alcohol 70% concentration.

All the hydroalcoholic extracts obtained were filtered at normal pressure through quantitative Whatman filter paper and present different colors, from pale green to green-brown and dark green.

For determining *total antioxidant capacity* (TEAC), 10 μ L volume of algae extracts were taken for analysis. Each determination lasted 120s. Analyses employed the photo-chemiluminescence method by ACL (Antioxidative Capacity in Lipid Soluble Substances) procedure Analytik Jena, using Photochem apparatus Analytik Jena AG, Germany, see Fig. 2. Triplicate samples of hydroalcoholic extracts were quantified by comparison with the standard substance Trolox®, Hoffman-LaRoche's trade name (6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid). For calibration, the standard kit of reagents, Analytik Jena, Germany, was used: R1 (dilution solvent), R2 (buffer reagent), R3 (photosensitive reagent), R4 (reagent sized). For the calibration curve standard solutions containing 0.5, 1.0, 2.0, 3.0 nmol Trolox were measured (suitable for 10 μ L R4), as Trolox calibration curve, Fig. 3.



Fig. 2. *Ulva lactuca* L. hydroalcoholic extracts samples obtained by cold maceration and Soxhlet extraction and Photochem apparatus Analytik Jena AG, Germany

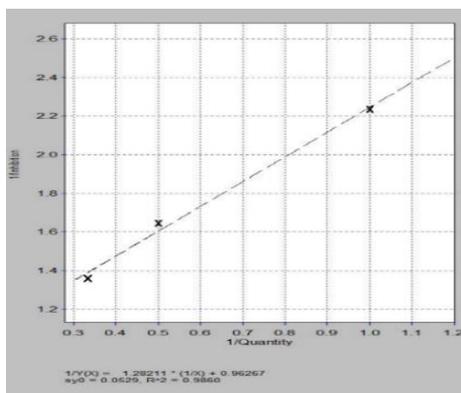


Fig. 3. Trolox standard calibration curve

Antibacterial activity

In order to demonstrate the antibacterial activities, we measured areas of inhibition for the different microorganisms that were classified under standardized conditions: from the gram positive bacteria we had *Staphylococcus aureus* (MTCC 737) and *Staphylococcus epidermidis* (MTCC 3615). We also had the gram negative bacteria - *Escherichia coli* (MTCC 1687) and *Pseudomonas aeruginosa* (MTCC 424). Ampicillin was used as reference substance, the standard drug.

Solvents chloroform, *n*-hexane and ethyl alcohol – water (1:1) were used to extract the material previously powdered (300 g), using the maceration process for 72 hours, occasionally stirring from time to time.

Each of the three extracts were concentrated after it was brought together with the filtrate and we kept them in the desiccator for future experiments. The *n*-hexane extract, chloroform extract and ethanol: water (1:1) extract were concentrated after combining the filtrate and kept in desiccator for further investigation.

Results and Discussions

The marine algae samples were first treated with a non-polar solvent such as benzen or dyethyl ether, then with a medium polarity solvent such as methyl alcohol or ethyl alcohol and finally with water. Each extract has been afterwards analysed in order to identify the presence of active principles of pharmaceutical interest. The extracts

were analysed individually using the specific methods for each group of active principles.

Table 2. Active principles identified in green algae *Ulva lactuca* L.

Table 2	Type of extractive solution	Class of active principles
	Ethereic extractive solution (A)	steroles
		triterpenes
		cumarines
	Alcoholic extractive solution (B)	catehic tannins
		reducing compounds
		antracenozides
		cumarines
	Water extractive solution (C)	reducing compounds
		saponosides
		catehic tannins

highlights the active principles identified in green algae *Ulva lactuca* L. It is interesting that in all three extractive solutions studied different classes of bioactive compounds have been identified that are responsible for the antioxidant and antimicrobial activity that we studied in the paper.

Total phenolic content determination and pigments chemical composition

The antioxidant capacity and antibacterial potential of the marine algae samples were highlighted by identifying and determining different natural compounds and their active principles, recognized in literature data for having the potential to give antioxidant and antibacterial activity. In the above table we showed our results for the determination of total phenolic contents, total chlorophylls ($a + b$) and total carotenoids. Table 3 presents the results obtained for the compositions of the studied marine algae. There is a good consistency with the literature data of other researchers who have worked on green seaweed. Phenolic compounds can be defined by their aromatic rings and their hydroxyl groups. A phenolic compound which contains an aromatic ring with one or two groups of hydroxyls are named simple phenols, for example benzoic acid or hydroxycinnamic acid which can be found in marine algae structure. Polyphenols represent a large family comprised by multiple phenol units [18]. From this method we can conclude that the most stable extracts and the highest inhibition are the *Ulva lactuca* L. extracts made with the Soxhlet extraction, from

which it can highlight *Ulva lactuca* L. extract 10 g/100 mL ethanol 70%, with an increased antioxidant activity. From the cold maceration, the best results were obtained from *Ulva lactuca* L. extract 5 g/100 mL ethanol 50% and *Ulva lactuca* L. extract 2.5 g/100 mL ethanol 70%.

Table 3. Total phenolic content, total chlorophylls and total carotenoids contents from extracts of green macroalgae *Ulva lactuca* L. from the Romanian Black Sea shore

Sample	Total phenolic TPC (mg. GAE/100g d.w.)	Total chlorophylls T-Chl (a) mg/g d.w	Total chlorophylls T-Chl (b) mg/g d.w	Total carotenoids (TCAR):
<i>Ulva lactuca</i> L.	286.1 ± 0.6	21.08 ± 2.69	3.77±0.36	10.57±0.85

All values show mean of three replicates, ± standard deviation

The unique chemical, physical and biological structure of polyphenols can divide them into different classed like phloroglucinols and phlorotannins. In recent times, various studies showed multiple beneficial therapeutical actions for phenolic compounds found in marine algae, such as antioxidant, antibacterial, anticancer and anti-inflammatory activities.

Marine algae organisms can synthesize different pigments such as carotenoids, phycobiliproteins and chlorophylls [19]. The green pigment for *Ulva lactuca* L. is given by the presence of *chlorophylls a* and *b* [19].

Antioxidant activity

Samples were prepared and the results were expressed as nmol Trolox equivalents/sample volume, according to Table 4.

Table 4. Maximum inhibition of free radicals and total antioxidant capacity of *Ulva lactuca* L. extracts

Extract samples	Max. Inhibition of free radicals	Total antioxidant capacity (nmol equiv. Trolox/sample volume)
<i>Ulva lactuca</i> extract 2.5g/100mL ethanol 50%, cold maceration	0.213	0.109
<i>Ulva lactuca</i> extract 5g/100mL ethanol 50%, cold maceration	0.257	0.161
<i>Ulva lactuca</i> extract 10g/100mL ethanol 50%, cold maceration	0.178	0.023
<i>Ulva lactuca</i> extract 2.5g/100mL ethanol 70%, cold maceration	0.381	0.285
<i>Ulva lactuca</i> extract 5g/100mL ethanol 70%, cold maceration	0.245	0.138
<i>Ulva lactuca</i> extract 10g/100mL ethanol 70%, cold maceration	0.024	0.022
<i>Ulva lactuca</i> extract 2.5g/100mL ethanol 70%, Soxhlet extraction	0.140	0.035
<i>Ulva lactuca</i> extract 5g/100mL ethanol 70%, Soxhlet extraction	0.231	0.111
<i>Ulva lactuca</i> extract 10g/100mL ethanol 70%, Soxhlet extraction	0.311	0.272

In the hydroalcoholic extracts of *Ulva lactuca*, obtained by cold maceration, a significant total antioxidant capacity was recorded for *Ulva lactuca* extract 5 g/100

mL ethanol 50% with 0.161 nmol equiv. Trolox/10 µL sample and for *Ulva lactuca* extract 2.5 g/100 mL ethanol 70% with 0.285 nmol equiv. Trolox/10 µL sample.

In the hydroalcoholic extracts of *Ulva lactuca*, obtained by reflux, Soxhlet extraction, a significant total antioxidant capacity, compared to extracts obtained by cold maceration, was recorded for *Ulva lactuca* extract 10 g/100 mL ethanol 70%, with 0.272 nmol equiv. Trolox/10 µL sample.

The highest antioxidant activity was obtained through cold maceration for *Ulva lactuca* extract 2.5 g/100 mL ethanol 70% sample, with a value of 0.285 nmol equiv. Trolox/10 µL sample.

The results obtained emphasize that extracts obtained in ethanol 70% induce the highest values of total antioxidant activities for different concentrations of the samples.

Antioxidants are very important compounds that can stop the production of free radicals and the chain reactions that may affect important cells in the organism through oxidation. They are also used in food and pharmaceutical preservation, with increasing percentage in recent times because of the toxicity and danger to human health caused by the use of synthetic antioxidants [20]. Seaweeds represent an important natural source for antioxidants with very little side effects. In human organism antioxidants are significant in their activity of regulating the oxidative stress related diseases [20, 21].

Ulva lactuca L. contain a varied compounds array with antioxidant activit such as, tocopherols, carotenoids and polyphenols. An important compound with antioxidant potential in green seaweeds is represented by ulvan, a sulfated heteropoly-saccharide obtained from *Ulva lactuca* [22].

Antioxidant potential was measured by scavenging activity of hydroxyl and superoxide radicals, metal chelating potential and superoxide radicals. Sulfate contents in ulvan has been altered by using trioxide/*N,N*-dimethyl formamide. After the modification all the parameters studied gave better results, higher scavenging activity, better reducing power and stronger chelating ability [22].

From this study we draw the conclusion that even if sulfates are already in the composition of ulvan, by increasing the number of sulfate radicals we can enhance the potential of its antioxidant activity [22].

Antibacterial activity

Many species of marine algae have been studied in order to examine their antibacterial and antiviral properties. A lot of polysaccharides have been found in the composition of seaweeds, from which we highlight some that could potentially exhibit antibacterial and antiviral activity: alginic acid, agar, laminarin, fucoidan, galactans, carrageenan, and mannans [23]. In this present study we explore the potential

antibacterial activity of green seaweed *Ulva lactuca* L. Review of literature has highlighted possible antibacterial activity in different compounds present in the green algae. In the view of this, an effort was made to verify some of the isolated compounds from *Ulva lactuca* L. for their antibacterial activity. The area of inhibition of microorganisms under standardized conditions was used in order to demonstrate antibacterial action for the various compounds. For present work, efficacy of eight compounds were detected against *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Pseudomonas aeruginosa* and *Escherichia coli*, see Fig. 4. The concentration used for the test compound was 1mg/mL. and we took Ampicillin as the standard drug.

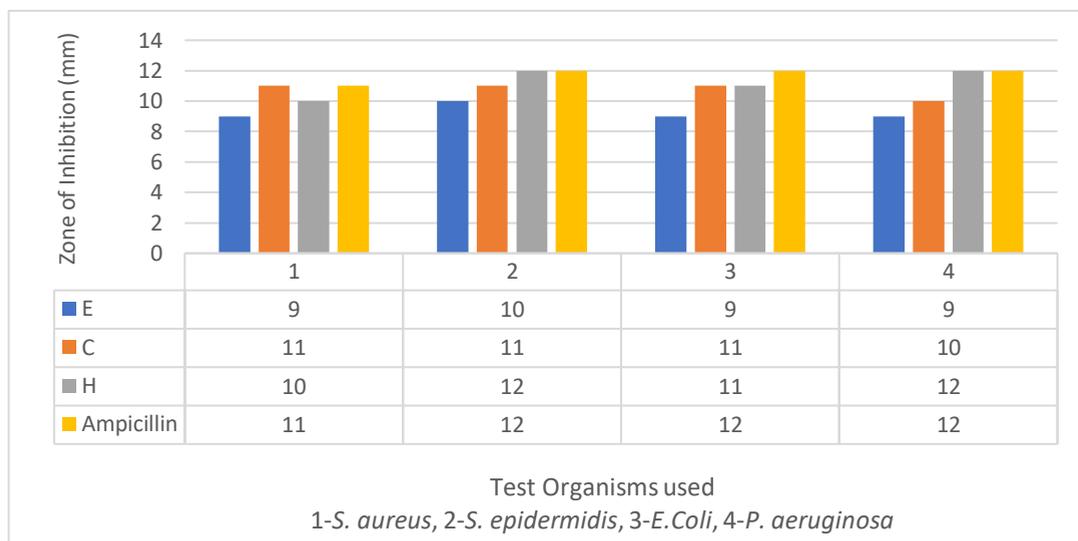


Fig. 4. Antibacterial activity of *Ulva lactuca* L. species

Against *Staphylococcus aureus* the chloroform extract showed the highest inhibition zone (11 mm) comparable to that of the standard ampicillin. In the case of *Staphylococcus epidermidis* and *Pseudomonas aeruginosa*, the extract in *n*-hexane achieved the largest inhibition zone (12 mm) comparable to that of the ampicillin standard. In the case of *Escherichia coli*, the extracts in *n*-hexane and in chloroform achieved the largest areas of inhibition (11 mm) but are below the values presented by the ampicillin standard. From the experiments we concluded that *n*-hexane and chloroform extracts had antibacterial activity comparable to the standard drug, ampicillin.

Conclusions

Green algae *Ulva lactuca* L. shows promising potential for both antioxidant and antimicrobial activity, that are due to the existence of known bioactive chemical compounds that support these characteristics. *Ulva lactuca* L. is also a source for many essential bioactive compounds ranging from antioxidants and essential minerals to

the highly signified and complete profiles of amino acids and fatty acids. In the present study we determined the total phenolic content, total chlorophylls T-Chl ($a + b$) and total carotenoids. We managed to demonstrate that various compounds from *Ulva lactuca* L. exhibit antioxidant activity which is given by various compounds such as phenolic constituents, pigments and other active principles and we showed that the *n*-hexane and chloroform extracts display good antibacterial activity on various gram positive and negative bacteria.

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Winning Prescription Without Title of State Property

Brunela Kullolli

Ph.D Lecturer “Aleksander Moisiu” University of Durrës

Faculty of Political Sciences and Law

Abstract

This conference paper is a study on the winning prescription without the title of state property, which is in itself one of the first ways of acquisition of property according to Albanian legislation. The project of this topic is the analysis of the practical implementation of the institute of winning prescription without the title of state property. From the comprehensive treatment made in practice regarding the procedural and material aspects of this institute, the issues raised for analysis are related to resolving the issue of whether state property is an item capable of being acquired by winning prescription and whether the issuance of laws and bylaws will be considered cause for termination of the statute of limitations. Seeing in full the legislation in force in the Republic of Albania, as well as the spirit of this special legislation in the field of property and and wealth real estate.State property is considered an impossible object to be acquired by winning prescription, as long as they do not meet the legal criteria for their transfer to private ownership entities..The plaintiff must prove that the lawsuit is directed against the person who was the owner until the conditions of the winning prescription are met.

Keywords: winning, prescription, state, property

Methodology Used

For the scope of the study itself, not only in time, but also in matters, that will handle is deemed reasonable to use a combination of methodologies, to achieve fulfillment of its final purpose. Literature search and selection as a first and important step in collecting of the main literature and ancillary, appropriate and in accordance with the study object.

Methodology used in the realization of the topic "Winning prescription without title of state property" begins with the use of the analytical method, which in the first part of the study was used to analyze practical application of the winning prescription institute without state title. Concretely this method has been used in practice analysis regarding procedural aspects and materials of this institute, issues raised for analysis have to do with resolving the issue if state property is a capable item to be won by winning prescription and whether the issuance of laws and bylaws will be considered the cause for the completion of the limitation period.

In this paper it is used and the case study method, which has helped me in analyzing the issues where I studied 3 (three) civil cases, I attended the relevant sessions by consulting the acts that occurred in the file litigation up to that stage of the process.

I considered it inevitable using the comparative method. The comparative method was used to make a comparison of cases in practice. I studied 10 (ten) decisions of the period 2017-2021 in order to identify the practical attitude. Due to different practical attitudes regarding the procedural and material aspects of the institute, issues raised for analysis have to do with the context formed, the question of whether the property is state-owned is item capable of being won by winning prescription and whether the issuance of legal acts and the law will be considered as a reason for termination of the statute of limitations.

Also in the literature formal and material resources have been used taken from the Albanian legislation as well as judicial jurisprudence over the years.

Keywords: *prescription without the title of state property, first ways of gaining ownership, litigation, object, legal acts.*

Introduction

In focus of the report is the analysis of the practical implementation of the institute of winning prescription without the title of state property. The reason for selecting this institute is that in cases with winning prescription without title, state property has displayed more practical problems.

From the case law research, I have studied 3 (three) civil cases where I have attended the relevant sessions by consulting the acts that occurred in the court file up to that stage of the process. I have studied 10 (ten) decisions of the period 2017-2021 on purpose to identify the practical attitude. Due to different practical positions regarding the procedural and material aspects of the institute, the issues raised for analysis are related to the litigation formed, the question of whether state property is

an item capable of being acquired by winning prescription and whether the issuance of legal acts and in law will be considered as a reason for termination of prescription. The treatment of the institute will be done in the following sections of this paper, the structure and content of which has been drafted in accordance with the Teaching Guide of the analysis report.

Issues actions and sessions attended

List of issues and acts under consideration.

Civil case with reg. No 2161, register date 9.09.2019;¹

Civil case with reg. No 911, register date 30.11.2018;²

Civil case with reg. No 4842, register date 16.06.2020;³

The acts taken into consideration that occurred in the court file in the cases listed are, the lawsuit request, the defense statement, the relevant evidence, acts of expertise, verbal process of the sessions. In the first case due to the procedural stage in which the file was at the beginning of the practice, I also reviewed the final conclusions of the parties.

B- Summary description of the facts, circumstances and condition of the acts taken in the analysis.

From the summary comparative analysis on the object and the relevant facts it results that the typology of facts is the same for all three cases⁴, the plaintiff claims that he has quietly possessed, for more than 20 years, behaving as owners, the property object of judicial conflict which appears registered in state ownership. In the comparative analysis differ from each other referring to the required material object (agricultural land, arable land, land), objects which are regulated in special legal provisions, part of the treatment of this analysis report.

¹ Pre-professional practice at the Tirana Judicial District Court

² For the purpose of practice study in relation to the selected institute I have consulted the official website of the judicial district of Tirana, other judicial districts and the official website of the High Court

³ **Plaintiff** M.D; A.D; F.D; R.K; O.D; R.D; XH.D; **Defendants** Council of Ministers, Ministry of Finance ect, with cadastral item "Field"

⁴ In the case with number 2161 basic register. The plaintiffs claim the obligation of the respondent party to recognize them as co-owners with a winning prescription without title on the property with an area of 1462m² with the **cadastral item "Filed" ect.**

C- Determining the material / procedural moment where the selected institute is located.

In the case with no. 2161, I say that the procedural phase in which I participated was after the closing of the judicial investigation, in the submission of the final talks dated 14.10.2021. In the other two cases the hearings were preparatory and judicial, respectively¹.

Analysis of the institute of winning prescription without title of state property.

Legal questions raised.

Firstly, who are the passively legitimized subjects when the immovable property over which the acquisition of ownership by winning prescription is claimed is owned by the "state" in general?

Secondly, According to the legal and sub-legal framework, is state property considered an item capable of being acquired with a winning prescription without a title, as long as its legal criteria set out in special laws are not met, its transfer to the ownership of private entities?

Thirdly, the approval of acts legal and sub-legal regarding the right of ownership, does it mean the exercise of his property and consequently can it be considered as a reason for termination of the statute of limitations, issuance of legal acts and and sub-legal by the bodies state for the acquisition of ownership over an immovable property under a certain regulation?

Theory-practice report

With regard to the first issue to be grounded lawsuit statute of limitations winning the title, the plaintiff in addition to proving the existence of conditions required in Article 169 of the Civil Code, based on Article 170 must prove that the lawsuit against directs the person who *has been the owner* until these conditions are met. Ownership substantially belongs to the state, but "state" is an abstract notion in the sense that any property that is not verified to be owned by a private entity is presumed to belong

¹ In the case with no. 911The procedural stage in which I participated was the court session held on 22.10.2021. In this session was presented the expert for the reporting of the act of expertise ect.

In the case with no. 18051 basic register, the procedural phase in which I participated on 12.11.2021 is a preparatory session, where after the presentation of the parties and the appointed expert, the plaintiff requested the procedural transition due to the change of life plaintiffs.

to the state. Referring to the decision of the Civil College of the High Court¹ refers to the obligation of the courts to investigate if the property, object of the winning prescription is owned or administered by the Municipality or is owned by the central government.

Passive legitimacy, referred to theoretical treatment, is the real legitimacy of the parties in the process by which the identical being of the person will be understood that the respondent is identical with the person against which material law allows it to be raised a lawsuit. ²When the immovable property is owned by the state, the law and bylaws come to the rescue.³ This law classifies them as inalienable⁴ public property and alienable public property.

Referring to different positions in practice, results that the respondent has legitimized the Ministry responsible for the administration of state property. In some other decisions the Ministry is not legitimized, but only the Council of Ministers,⁵ with the legal argument that the ministry in according to the law, it has only the right to administer state property and not to alienate it. In another position of practice, only the State Advocacy is passively legitimized.

I consider that the right attitude is that the Council of Ministers is passively legitimized as a representative of the state owner or the respective local unit, depending on whether the property is owned by the central or local government. Other attitudes are not right, the Ministry of Finance and Economy, has no right to recognize owners, citizens who claim to benefit from the institute of winning prescription, right of ownership, for properties for which the relevant law does not recognize the right of disposal, consequently it cannot be passively legitimized. On the other hand, the State Advocacy can not be passively legitimized, referring to the law

¹ Decision of the civil panel of the high court no. 367 dated 16.09.2015, case R.S against the Council of the Municipality of Vlora.

² Flutra Tafaj Kola, Asim Vokshi, "Civil Procedure-Part One, edition II, Albas, Tirana, 2018, page.128

³ Law no.8743, For state immovable properties dated 22.02.2001 amended by law number 9558, dated 08.06.2006.

⁴ For inalienable public immovable properties are defined in article 3 point 1 of law 8743, dated 22.02.2001 "On state immovable properties" amended by law number 9558 dated 08.06.2006

⁵ Referring to the practice followed, from the acts that occurred in the court file in the case with basic registration number 2161, the plaintiff with a request for judicial settlement has requested to withdraw from the summons as a defendant in this process for the Ministry of Finance and Economy

which defines its functions, it has the role of providing legal assistance and protects the property interests of the Albanian state but has no right to recognize owners citizens who claim profit through this way original ownership gain.

In relation to the second issue;

From the point of view of substantive civil law, I consider it necessary to consider the elements of winning prescription as the original way of gaining ownership.

Uzucapio¹ means profit by use-possession.² The Civil Code in force provides for two types of statute of limitations, ordinary and extraordinary winning statute of limitations.³ Regarding the winning prescription without title, newly determined in the Civil Code⁴, when the immovable property is state owned, the same cumulative conditions are required to be met, this also refers to the position of the High Court⁵, conditions which are:

a) Possession of the item;

b) Possession for a certain time;

¹ The word 'Uzucapio' lat. Is formed by combining the words 'usus' (use) and 'capio-ere' (to take).

² Prof. Nathanaili A., 'Acquisition of Property through Possession', People's Justice Nr. 4/1956, p. 23. Acquisition of ownership by winning prescription relies on two main elements which are the possession of the thing and time making it possible through the action of the institute of winning prescription a state of fact, such as possession of the thing to be transformed into a just state, gaining ownership of the item.

³ Dissertation for the protection of the scientific degree of doctor, Altin Shkurti on the topic 'Possession and its protection' p. 77

⁴ In the case of the winning prescription without title as a way of gaining ownership, a new term will start from 01.11.1994, the date on which the new Civil Code entered into force. This position was also held by the Supreme Court in the cases it reviewed. Thus, the Civil College of the High Court, with decision no. 303, dated 06.10.2009, has decided to annul the decision No. 1097, dated 12.10.2006 of the Court of Appeals of Tirana and the decision no. 4717, dated 15.07.2005 of the Court of First Instance of Tirana and the termination of the trial of the case, reasoning that among other things that: '... since in this case we are in the conditions provided by Article 169 of the Civil Code, deadline I prescription is 20 years old.

⁵ Decision of the Civil College of the High Court no. (100) dated 23.03.2016, S. Panoti case against the Ministry of Agriculture, Food and Consumer Protection, Regional Directorate of Agriculture, Food and Consumer Protection, Local Immovable Property Registration Office Tirana. It is said that after 1991, ownership of the land was allowed, and they were already able to acquire the non-public immovable

c) The item must be capable of being won with a winning prescription;

Contemporary doctrine, determines that to gain ownership of the thing through the winning prescription *the item must have been possessed* by the possessor uninterruptedly, quiet (*nec vi*), public (*nec clam*) manner, and must have the will to keep the item as its own (*nec precario*). The attitude also stems from the jurisprudence of the European Court of Human Rights.¹ For an item to be able to be won with a winning prescription it must be possessed by its winner. As a rule, they are capable of acquiring both movable and immovable property which are in civil circulation. The rule which has its exception. Thus, items that are out of civil circulation cannot be acquired by winning prescription. After the theoretical approach, as above evaluated that we must determine some moments as a function of the second question raised for analysis.

First, what is the real estate on which the acquisition of ownership with a winning prescription without title is claimed?

Referring to the same typology of facts and object, the property subject to trial is owned by the state. The legal and sub-legal framework that is implemented are the laws and bylaws referred to in the first question raised.

Second, are real estate subject to litigation, inalienable public property?

Article 4 of Law 8743/2001 provides that state immovable property, which is not public property, such as agricultural land, land, buildings, hardened assets of the enterprise are placed under state administration, as well as other properties of this type, ***if are not subject to special legal provisions***, have a legal regime equal to private property and are subject to the rules provided in the Civil Code. The position of the practice in 7 out of 10 cases analyzed is that the property subject to trial is not inalienable public property, consequently Article 4 of the law applies, which in an *ad contrario* interpretation in case the state property has a legal regime regulated by a special law, the acquisition of ownership will be carried out taking into account the

¹ A. Pye (Oxford) Ltd and J.A. Pye (Oxford) Land Ltd v. United Kingdom no. 44302/02 ECHR 2002 according to which “konk the concrete issue was not related to the restriction of property in order to deprive the owners who are with regular papers. The goal was to fix the factual relationship. Historically, 12 years of possession by the respondent party was sufficient to extinguish the previous owner's right to reclaim his right or regain possession, and the new title depended on the principle that long, uninterrupted possession, so calm, it gives you a title”.

application of , relevant legislation, excluding the general rules of the Civil Code. So in the civil case in the reasoning part it is determined that:

*'Special laws have given the right to private entities to buy state-owned land, addressing the competent bodies, depending on the manner and time in which they have used this land. In these conditions, the right to acquire the ownership of state property by private entities is part of the search of the latter and the fulfillment of certain criteria for the nature of the land and its use '.*¹

In the case of transferable state property, for which the state may carry out actions as private entities, the alienation to third parties is carried out taking into account the criteria of special laws. ²

The court in one of the cases maintains that the principle "lex specialis derogat lex generalis", gives priority to the application of the special law for the acquisition of ownership over a state-owned immovable property.

As above based on the theoretical and practical analysis, I evaluated that the position referred to is correct and should be followed in the case of the three issues referred to in the introductory part of the report. As long as special laws define the following of certain administrative procedures, the transfer of state property in favor of private entities, if these procedures are not applied, state properties are consequently not able to be acquired by winning prescription, thus leading to non-compliance of one of the cumulative condition.

Regarding the third issue,

Acquisition of ownership by beneficiary prescription is based on the possession of the thing, the definition of which is found in Article 304 of the Civil Code. From the content of the article and the subsequent provisions that regulate the possession, it is not determined what are the legally required conditions for the possession of the thing for the effect of its profit with a winning prescription. Possession of the object is considered to be when it is acquired peacefully, ie without physical or psychic

¹ The opposite position is evidenced in the decision no. 9937 and number 2915 act, the court of the Tirana judicial district, where the court has decided to accept a lawsuit

² V.K.M. no.200 dated 19.02.2009 and DCM no.578 dated 29.08.2012 On determining the procedure of transfer of ownership of yards in use, where the subject must address the competent body that is the PRCA in an administrative way to gain the right of ownership over yard in use ect.

violence, and is held by the possessor "without being disturbed" by persons claiming the existence of their right to possess the property.

In decision no.6296 date 15.01.2020 the court reasoned that the actions or decisions of the state administration bodies, show the interest of the state for the state properties, regardless of whether they are submitted directly or indirectly, spoil the peaceful possession of the possessor over the respective property. The state expresses its will through legal and sub-legal acts from time to time, depending on the issues and problems that are presented for solution, thus bringing about the interruption of the further progress of the winning prescription deadlines. This position was also maintained in the decision of the Constitutional Court No. 4/2016. Regarding the above theoretical and practical treatment, I consider that the position of the court that accepts the semi-legal or legal summary is the way it expresses its will in exercising the property rights of the state, by 'directly' concerning the possessor and the and consequently interruption of further walking of term winning prescription, is right.

Comparative analysis between practical cases.

From the study of practice, specifically 10 (ten) issues of the period 2017-2021 Regarding the first legal question, practical positions can be grouped:

1. The Council of Ministers is passively legitimized in most of the analyzed decisions.
2. In the rest of the cases, the Ministry responsible for the Economy and the State Advocacy is passively legitimized.

With regard to the second and third question⁶ of 8, the trial court decided to dismiss the lawsuit referring to the 2 main reasons.¹

Firstly, state property which is regulated by a special law can not be equated or have the same legal regime as private property, which excludes them from the scope of the material civil institute as a way of gaining ownership, being out of civil circulation.

Secondly, the non-possessive owner, the state has not remained passive. The legislator in the legal sense has not left the plaintiff in possession, issuing a series of laws and bylaws, regarding the resolution of the situation in question by interrupting the passage of time.

¹ Decision No.9100, No.Acti 1587, dated 06.11.2018 with litigant Plaintiff M.SH. and the respondent Municipality of Tirana, Council of Ministers

In the other two cases, the reasoning for dismissal of the lawsuit is related to the characteristics of the state entity which expresses the will through legal and sub-legal acts¹ and the reasoning for the existence of a special law. In two court cases analyzed, the court decided to accept the lawsuit.²

In the case with No. 9937 Decision³, the court refers to the special law 8743/2001 article 4 without stopping in its analysis with the argument that the property under trial is state property, free in civil circulation, individualized and capable of being acquired with winning prescription.

In the case⁴ with plaintiff V.I. defendant Municipality of Tirana, the court has reasoned that there are all the conditions and elements required by the winning prescription institute. With regard to possession, it is considered terminated only when it is proven that against one of the possessors over the years a claim has been filed in relation to the thing by the owner through a regular lawsuit before the court.

3. Conclusions and recommendations

Firstly, The plaintiff must prove that the lawsuit is directed against the person who was the owner until the conditions of the winning prescription are met. The Council of Ministers or the relevant local unit is passively legitimized when the property under trial is respectively owned by the central or local government. The Ministry of Finance and Economy is not passively legitimized as it has the administration and not the alienation of state property. The State Advocacy is not legitimized because in the

¹ Decision No. 10095 dated 21.03.2018 of the Court of the Tirana Judicial District.

² Decision no. 448 dated 17.06.2016, of the Lushnje Judicial District Court Plaintiff F.B. with the respondent Ministry of Economic Development, Trade and Entrepreneurship Tirana and third person Municipality of Lushnja, Municipal Council of the Municipality of Lushnja, IPRO Lushnja, the court rejected the lawsuit on the grounds of the existence of a special law. In the conditions when the specific law no. 171/2014, determines the rules for the transfer of ownership of agricultural land, as well as law no. 8337, dated 30.04.1998 "On the transfer of ownership of agricultural land, forests, meadows and pastures", prohibit the alienation of this property, the court considers that the land subject to conflict claimed by the plaintiff is inalienable and can not be subject to prescription winner without title.

³ Decision No. 9937 and No. 2915 Act, Tirana Judicial District Court with plaintiff Q.R and defendant Municipality of Tirana with the object of winning with winning prescription of 249.9 m2. the item is individualized real estate, in the inventory of properties of the Municipality of Tirana and is an Illyrian item in civil circulation

⁴ Decision No.10406 and No.1475 Act, Tirana Judicial District Court

sense of the law "On Advocacy" it provides representation and legal aid to state bodies.

Secondly, State properties which are regulated by a special law in the sense of Article 4 of Law 8743/2001 can not be equated or have the same legal regime as private property. Looking at the entire legislation in force in the Republic of Albania, as well as the spirit of this special legislation in the field of property and immovable property, state property is considered as items incapable of winning with a winning prescription, as long as the criteria are not met. legal for their transfer of ownership to private entities.

Thirdly, the State is an abstract notion and unlike private subjects of law, it lays subjective rights deriving from the relationship of ownership through its bodies. The adoption of laws and bylaws is the way it expresses the will to exercise the rights of state ownership, 'disturbing' the possessor and consequently interrupting the further running of the winning statute of limitations.¹

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An Overview of Correlations Between Therapeutic Uses and Chemical Composition of *Morus nigra* and *Morus alba* Species Fruits

Ticuta Negreanu-Pirjol

Ovidius University of Constanta, Faculty of Pharmacy, Constanta, Romania

Emin Cadar

Ovidius University of Constanta, Faculty of Pharmacy, Constanța, Romania

Corresponding Author

Bogdan-Stefan Negreanu-Pirjol

Ovidius University of Constanta, Faculty of Pharmacy, Constanța, Romania

Abstract

The therapeutic effects of the *Morus nigra* L. and *Morus alba* L. fruits can be highlighted by their bioactive principles composition. The paper correlates recognized therapeutic uses of mulberries species in folk medicine with the chemical composition literature data. Phytotherapeutic treatments based on mulberry fruit extracts are highlighted, which have given very good results in many diseases such as, allergies, asthma, gout, rheumatism, chronic fatigue, growth disorders, circulation disorders, hoarseness, pharyngitis, tonsillitis, hepatitis viral stress and exhaustion, vitamin and mineral deficiencies, hypercholesterolemia, gastroduodenal ulcer, prostate cancer. In the present paper, applying specific methods to pharmacognostic studies, active principles have been identified in various concentrations of hydroalcoholic fruits extracts. Could be consider that the indigenous vegetable products *Morus nigra* L. and *Morus alba* L. fructus harvested from the Dobrudja area flora, eastern of Romania, region with a favorable climate for the accumulation of vitamins and active ingredients, represents an important source of total phenols, ascorbic acid, citric acid, niacin and riboflavin. The increased content of carotenoids pigments and phenolic compounds emphasize the valuable antioxidant activity, which could be corelated also, with their important minerals content such as, K, Na, Ca, Mg, Fe, Zn. In order for these natural substances to be properly accumulated by the human body, we recommend the second half of June as the optimal harvest period for ripe fruits and using in various phytotherapeutic forms, juices, syrups, teas, or as fresh food fruits.

Keywords: *Morus nigra* L., *Morus alba* L., phytotherapeutic, antioxidant activity, phenolic compounds

Introduction

The mulberries reside into the *Morus* genus, family Moraceae. Twenty-four species of *Morus* have been found to exist in the world with over one hundred different varieties. *Morus* species can be found from the Northern hemisphere to the Southern one and can grow in temperate and subtropical regions. They are widely spread from sea level to up to 4000 m altitude [1]. The name of the plant has its origin in Turkish *dut* <Persian (*tut*): mulberry, s.m. = the name of two species of trees with asymmetrically lobed leaves, with small, fleshy, white (*Morus alba* L.) or black-reddish (*Morus nigra* L.) fruits, with a sweet taste, whose leaves represent food for silkworms; acute; From the Turkish *dut*. = tree with small, fleshy, white or black fruits (*Morus alba*, *Morus nigra*). It has been suggested that the generic *Morus* name comes from the Latin word *mora* (delay) due to the late appearance of buds [2].

The genus *Morus* (mulberry) is represented by trees with a height of 12-15 m, originating from China and Japan (white mulberry) and from Persia (black mulberry). Mulberry displays a long history of therapeutic and medicinal use in China, with almost every part of the plant being exploited. It is currently widespread in Asia, Europe, Africa and North America. In Romania it is cultivated in the hill and plain areas. As a plant it belongs to the branch Magnoliophyta, class Magnoliopsida ordinal Rosales family Moraceae, genus *Morus* [3].

The black mulberry has been known throughout southern Europe since ancient times, and is thought to have been brought from Persia. It has been mentioned by most early Greek and Roman writers; Pliny observed it and described its use as a medicinal plant. Its leaves were used by the Romans to treat diseases of the mouth, trachea and lungs, and since the 17th century the bark of the roots has been used here as a dewormer, and also as a dye [4].

Mulberry leaves often serve as food for silkworms. In ancient times, silk was considered a product of mulberry leaves, the activity of silkworms not being known and understood. The worm culture was introduced by Justinian of Constantinople (527-565). In Italy, the black mulberry was used to grow silkworms until about 1434, when the white mulberry was introduced from the Levant, which was after that point the preferred choice [5]. Mulberry leaves have been used in the past as tea or powder juice [6]. In Korea, mulberry leaves are used to make ice-cream flavors and in India, they are used as a good nutritious, cheap food for breakfast and dinner [7]. Currently mulberry leaves have been approved as an excellent food source rich in protein, vitamins, microelements and dietary fibers.

Mulberry leaf contains tannins, flavonoids, glycosides. Recent studies have shown the presence of a substance - 1-Deoxynojirimycin - inhibitor of the enzyme glycosidase I with a role in the processing of oligosaccharides in the body, thus being responsible for the hypoglycemic effect of the leaf.

In the present paper, through applying specific methods to pharmacognostic studies, active principles have been identified in various concentrations of black and white mulberry hydroalcoholic fruits extracts.

***Morus nigra* L. and *Morus alba* L. in folk medicine**

As a traditional folk medicine, mulberry was used as an analgesic, emollient, sedative, the leaves being considered antibacterial, astringent, diaphoretic, hypoglycemic, dental and ophthalmic. Bark tincture is used to relieve toothache. Romanian traditional medicine from the beginning of the 20th century used the peel of mulberry root with a hot and bitter taste, for its purgative action, e.g. Mororum syrup, is prepared from the fruit, with a laxative, slightly diuretic effect. The white mulberry had several uses in the popular tradition: the leaves represented food for silkworms, the fermented fruit was used to produce brandy and the mulberry leaf tea was used to cure liver disease. From the bark of the black mulberry branches, gathered in the spring, which was boiled and sweetened with sugar, a cure was obtained - which was taken in the morning, on an empty stomach, against tapeworm [8]. Mulberry is used as an excellent remedy in the treatment of: lung diseases, gastric and duodenal ulcers, sore throats, diarrhea (mulberry leaves), diabetes, chronic enteritis, stomatitis, tapeworms (bark), asthenia (mulberry leaves) [8].

In natural products mulberry leaves are used mainly due to their hypoglycemic action, being indicated in mild forms of diabetes. Mulberry leaves are also used for their valuable antioxidant properties.

Popular treatments with mulberry

Mulberry fruits, if eaten in the morning, 200 g on an empty stomach for 10 days, will cleanse the body of toxins. Also, the juice of ripe mulberry fruit, due to the citric acid it contains, is considered an excellent remedy in treating canker sores, angina and stomatitis.

Mulberry syrup is very effective in treating constipation. It is prepared with the help of a cup full of ripe mulberries, 2 cups of sugar and a liter of water. After boiling and reboiling several times, it is recommended, after cooling that the mulberry syrup be stored in a tightly closed container and kept in a cool place.

Mulberry leaf tea is drunk three times daily after each main meal and has an effect in treating diabetes and diarrhea. This mulberry leaf tea is also recommended to treat chronic enteritis and intestinal worms [9]. Mulberry root peel is very useful in

treating ascites and intestinal worms. Thus, 2 crushed teaspoons of the root peel are boiled in 300 mL of water, until the liquid drops to 200 mL.

Material and method

The indigenous vegetable products *Morus nigra* L. and *Morus alba* L. fructus harvested from Dobrudja area flora, eastern of Romania, have been used. The plant material researched, mulberries represent the fruits of the black mulberry, *Morus nigra* L., and the white mulberry *Morus alba* L. called drupes. Harvesting is done from Dobrudja spontaneous flora and crops, manually, from May to the end of June period.

The whole, healthy, well-ripened, black fruit have been harvested. The transport was done in paper bags, the plant material was protected from the direct action of the sun and high temperatures that could favor fermentation.

For the study, black mulberries were harvested from gardens and yards, which benefited during the development of different climatic and soil conditions in the Constanta area. These areas have brown and yellow-brown wild soils, with average annual temperatures of 9-11 °C. First, a general description for the botanical characterization of the plant was made.

The pharmacognostic study was performed using specific methods. In order to identify the active ingredients, we used the vegetable product remaining from the alcohol extraction, dried and extracted with 100 mL of water in a 90 °C water bath for 30 minutes. The solution is used for reactions, specific to groups of active principles soluble only in water (oozes and polyoozes) or not depleted by alcohol (tannins, alkaloids, etc.).

Etheric extractive solution

It was weighed 10 g of freshly sprayed vegetable product, which was first extracted with ethyl ether (2 x 50 mL), refluxing for 15 minutes. Each reflux was followed by filtration, the obtained solutions being collected in a ground flask. The ether solutions were concentrated on a water bath to 50 mL. Solution A was obtained. It was used to carry out the reaction characteristic of lipophilic compounds. The ether-depleted vegetable product was stored for further alcohol extraction [8], [10].

Alcoholic extractive solution

The vegetable product depleted with ether, was brought to the water bath, in order to remove traces of ether. The vegetable product was extracted with methylic alcohol (2 x 100 mL) by refluxing for 30 minutes. The combined methanolic solutions have been concentrated to 50 mL by distillation of the solvent and have been divided into two parts. One part was used to identify the active principles on the non-hydrolyzed solution (25 mL), and the other part was subjected to hydrolysis with 15 mL 10% hydrochloric acid on the electric jacket, with water for 30 minutes (Fig. 4.2). Exhausted vegetable product is stored for water extraction.

Water extractive solution

It was used the remaining vegetable product from the alcohol extraction, dried and extracted with 100 mL of water in a 90 °C water bath for 30 minutes. The solution was used for reactions specific to groups of active principles soluble only in water (oozes and polyoozes) or not depleted by alcohol (tannins, alkaloids, etc.).

To identify the chemical compounds in the three extracts, we analyzed them separately, using methods corresponding to the physicochemical properties for each group of active principles.

Results

Botanical characterization

Mulberry are woody plants (trees, shrubs), herbaceous, that contain a latex, rich in rubber. They possess a straight, gray stem, branched from a low height, with a sparse crown. Mulberry leaves are thin, very different in shape (ovate or elliptical, acute or short acuminate), with a round base and an irregularly serrated edge; they are divided into 3-5 unequal or undivided lobes, glabrous, smooth, slightly glossy on the face and short pubescent at the ribs, on the back [11]. The unisexual flowers, grouped in cymose or amentiform inflorescences, are arranged monoeciously or dioeciously. The mulberry is a dioecious plant, so for 5-6 females a male is planted. There is also the possibility of grafting a male branch on a female crown. The flowers are unisexual, the male ones are cylindrical, and the female ones are oblong. It blooms in May. The plant bears fruit only from the age of 7-9 years.



Fig. 1. *Morus nigra* L. tree and leaves
(original)



Fig. 2. *Morus alba* L. tree and leaves [23]



Fig. 3. *Morus nigra* L. leaves [24]



Fig. 4. *Morus alba* L. leaves [25]

Morus nigra is a deciduous tree that can grow up to 12 meters tall and up to 15 meters broad. Its leaves are 10-20 cm long and 6-10 cm broad, long, downy on the underside and short and rough on the surface, see Figs 1, 3 and 5.

Morus alba is a medium sized tree which grows up to 20 meters tall. It generally has a pretty small lifespan, although there are few exceptions that can live up to 250 years. If the tree is old the leaves are up to 12 cm long, sawlike on the edges, circular at the top and cordate at the base. The fruit is simple (achene or drupe) or compound, formed by the development of the receptacle, the perigon and the axis of the inflorescence. The fruit (mulberry) is composed of numerous false, small drupes, arranged on the axis of the inflorescence, which becomes fleshy. The multiple fruit is called sorose (mulberry, acute), see Figs 2, 4 and 6.



Fig. 5. *Morus nigra* L. fruits [24]



Fig. 6. *Morus alba* L. fruits [26]

Black mulberry is an edible fruit, its dark purple color is given by anthocyanins. The fruit contains small drupes that form a cluster, each drupe being 2-3 cm long. Black

mulberry each drupe being 2-3 cm long [8]. Black mulberry fruits are richly flavoured in comparison to the white mulberry which are more insipid. White mulberry is cultivated in many areas for the production of silk and for the fast release of pollen. Mulberry fruits are 1.5 cm long, in wilderness it can be of deep purple color, but usually the cultivated plants have white to pink fruits [8]. In comparison to black and red berry, fruit is sweet but bland.

Table 1 Differences between the two *Morus* varieties

<i>Morus alba</i> L.	<i>Morus nigra</i> L.
The leaves of the white mulberry have a length of 5-12 cm, are fragile, shiny, smooth and often lobed	The leaves of the black mulberry are larger (up to 20 cm), thick, rough and rarely lobed.
The white mulberry fruit is ripe in late spring	The fruit of the black mulberry is not ripe until early summer.
The white mulberry fruit has a long stalk (sometimes the length of the fruit)	The black mulberry fruit has practically no stalk or a very short stalk.
The white mulberry fruit is sweet before ripening, but not very sweet when it is ripe	The black mulberry fruit is very acid before ripening and it is very sweet when it is ripe
White mulberry fruit is generally unappreciated in some countries	The aroma of black mulberry fruit attracts almost the whole general public

Important bioactive compounds present in *Morus nigra* L. and *Morus alba* L. fruits

Following the reactions performed on the three extracts, etheric, alcoholic and aqueous obtained from the fruits of the species *Morus nigra* L. and *Morus alba* L., the many active principles were identified, see Table 2. The aglycones from the etheric extractive solution have been obtained through evaporation, after treating the obtained residue with CH₃OH, using the Shibata reaction [8].

Table 2. Active principles identified in the three extracts from the fruits of *Morus alba* L. and *Morus nigra* L. species

Analyzed solution	<i>Morus alba</i> L.	<i>Morus nigra</i> L.
	Aglycones (flavonic, anthraquinone,	Aglycones (flavonic, anthraquinone,

Etheric extractive solution	coumarines and coumarines and triterpenes)	coumarines and triterpenes)
	Volatile oils	Volatile oils
	Fatty acids and resin acids	Fatty acids and resin acids
	Alkaloid bases	Alkaloid bases
	-	Carotenoids
	Sterols	Sterols
Alcoholic extractive solution	Gallic tannins	Gallic tannins
	Resins and alkaloids	Resins and alkaloids
	Reducing compounds	Reducing compounds
	Flavonoides	Flavonoides
	Sterol and triterpene heterosides	Sterol and triterpene heterosides
	Alkaloids	Alkaloids
	Amino acids	Amino acids
	Polyphenols	Polyphenols
-	Antocianosides	
Water extractive solution	Polyholosides (mucilages)	Polyholosides (mucilages and pectins)
	Oozes and polyoozes	Oozes and polyoozes
	Gallic tannins	Gallic tannins

Volatile oils have been obtained using evaporation, treating the residue with alcohol, sterols and triterpenes using the Liebermann-Burchard reaction, carotenoids using the reaction with H₂SO₄ [8]. In the alcoholic extractive solution, the gallic tannin was identified using FeCl₃ reaction, alkaloids using the Mayer and Bertrand reaction and antocianosides were identified using an aqueous solution with acid pH [8]. The oozes and polyoozes from the water extractive solution have been identified using extract concentration and the residue was treated with H₂SO₄ and with Timol alcoholic solution [8]. The ether extract contains valuable lipophilic, chemical compounds. The carotenoids that were found only in *Morus nigra* are highlighted. In the alcoholic extract there are hydrophilic chemical compounds. Table 2 highlights the existence of alkaloids in both etheric and alcoholic extractive solutions. In the aqueous extract, in addition to the alcohol-soluble compounds, except for the resins, there are polyholosides such as, pectins, mucilages, gums [8], [10].

Discussions

Phytherapeutic treatments based on mulberry fruit extracts

The active principles of the black mulberry fruits *Morus nigra* L., *Morus alba* L. are synthesized in plant cells. In order for these natural substances to be properly utilised by the body, they must be found in various phytherapeutic forms (juices, syrups, teas) [12]. The phytherapeutic treatment based on mulberry fruit extracts gave very good results in the following diseases: allergies, asthma, gout, rheumatism, chronic fatigue, growth disorders, circulation disorders, hoarseness, pharyngitis, tonsillitis, viral hepatitis, conditions stress and exhaustion, vitamin and mineral deficiencies, hypercholesterolemia, gastroduodenal ulcer, prostate cancer. We consider that the vegetable product *Morus nigra* L. fructus harvested from the local flora is an important source of total polyphenols. We recommend the second half of June as the optimal harvest period, and as areas with a favorable climate for the accumulation of vitamins and active ingredients, from the the hilly and mountainous areas [13].

Phytherapeutic treatments based on mulberry leaf extracts

Mulberry leaves contain mainly moranolin or L-deoxyojirimycin (DNJ), a piperidine alkaloid that inhibits the intestinal enzymes responsible for the breakdown of complex carbohydrate molecules into simple absorbable sugars. It is one of the strongest alpha-glucosidase. The concentration of DNJ in most mulberry leaf products is less than 0.2%. Extracts obtained from young mulberry leaves can contain between 0.5 and 3% DNJ. After oral absorption, moranoline is absorbed into the circulation and then rapidly excreted in the urine. Regarding the total alkaloid content found in mulberry fruits, it was reported for *Morus alba* L. 660 ± 5.25 mg / 100g FW and for *Morus nigra* L. 630 ± 5.93 mg / 100g FW [14], [15].

Hypoglycemic action

Mulberry leaves have been used in diabetes treatment since the earliest times. The effect of preventing and treating type II diabetes has been confirmed by recent studies by researchers in humans and laboratory animals. It is believed that this antiglycemic action is due to the synergistic effect of moralinoline, glycopeptides, flavonoids [16]. An important category of consumers prefer supplements from plant extracts to synthetic substances. In addition, mulberry leaf extract also contains compounds that stimulate insulin secretion and antioxidants.

Anti-inflammatory and anti-allergic action

Flavonoids and related compounds isolated from mulberry bark have anti-inflammatory effects. The extract obtained from the bark of *Morus* root in hot water possesses strong antihistamine and antiallergic activity [16].

Vasoactive action

Mulberry leaves can have a significant cardiovascular effect. Two main components of the

leaves, rutin and quercetin, induce considerable vasorelaxation.

Neuroprotective action

In diabetes there are subtle disturbances that include alterations in neurotransmissions, which generates learning disabilities and memory deficits. Indeed, the ability to learn and memorize is reduced in patients with type I diabetes, and those with type II diabetes have been observed to impair verbal memory or complex information processing [17]. The methanolic extract obtained from mulberry leaves has antidopamine activity, demonstrated experimentally in mice. The experiment confirms the potential of the clinical applications of mulberry in the management of psychiatric diseases. In addition, the mulberry possesses adaptogenic activity demonstrated on a model animal with chronic stress, with the possibility of its clinical use as an anti-stress agent [16].

Anticancer action

The methanolic extract of mulberry leaves shows strong cytotoxic action against cancer cells. A glycoside was isolated from the bark of *Morus* root, which significantly inhibited the proliferation of human ovarian cancer cells [16].

Anti-obesity action

Studies in rats with diet-induced obesity have shown that chronic treatment with ethanol extract obtained from mulberry leaves has an anti-obesity effect. This effect can be partly explained by the antagonistic action of mulberry extract on hormone receptors, which ultimately lead to a decrease in body weight [17].

Lipid-lowering action

Diabetes is associated with many lipid abnormalities. The extract obtained from mulberry leaves in butanol inhibited the growth of cholesterol, preventing atherosclerosis. Treatment with traditional Chinese herbs, including *Morus* sp., significantly reduces the accumulation of alcohol-related liver lipids, restores normal liver lipid levels, after four weeks of treatment and can be used as a remedy to prevent or treat alcohol-induced fatty liver [18].

Antioxidant and antimicrobial action

Lipid peroxidation of cell membranes can lead to cell necrosis and is thought to be involved in many pathophysiological conditions such as type I diabetes. Free radicals and reactive oxygen species also predominate in diabetes [18].

Mulberry contains several antioxidants compounds: polyphenols, carotenoids, vitamins A, C, E, which increase the antioxidant status of the body and modulate oxidation through various mechanisms [19].

The total polyphenols content has been determined using the Folin-Ciocalteu method and results may be different in the two species such as, in *Morus nigra* it has been identified 880 ± 7.20 mg/100 g FW and in *Morus alba* 1650 ± 12.25 mg/100 g FW [20]. Among the vitamins, mulberry fruits contain a significant amount of ascorbic acid, in *Morus nigra* 15.37 ± 0.89 mg/100 g FW has been identified and in *Morus alba* 15.20 ± 1.25 mg/100 g FW [20]. Other vitamins found were Niacin, for *Morus alba* 3.10 ± 0.60 mg / 100 g FW, and for *Morus nigra* 1.60 ± 0.1 mg / 100 g FW were reported.

A diet rich in plant antioxidants has been inversely correlated with mortality from coronary heart disease. Mulberry contains as main flavonoids quercetin-3-(6-maloniglucoside), the most abundant flavonol-glycolose in mulberry fruits. These have shown antioxidant activity in various experimental animal models. In order to ensure the stability of the antioxidant components and to preserve the antioxidant activity of the mulberry preparations, it is important that the leaves are dried at a controlled temperature, 60 °C [19].

Also, mouthwashes based on mixtures black mulberry, bitter cherry and cornelian cherry fruits hydroalcoholic extracts, present a significant antioxidant and antimicrobial activity and could be recommended in the oral cavity affections treatment, gum inflammations, dental pains, preventing of bacterial plaque formation, halitosis and would be a possible new antimicrobial alternatives, with lesser side effects that are often associated with synthetic antimicrobials [21, 22].

Minerals content

The *Morus* sp. minerals content it is also highlighted in the literature [20]. Thus the most potassium content is found in *Morus alba* 1731 ± 11.5 mg / 100 g FW and in *Morus nigra* 1270 ± 9.36 mg / 100 g FW, followed by calcium 576 ± 7.37 mg / 100 g FW for *Morus alba* and 470 ± 6.95 mg / 100 g FW, sodium and magnesium are comparable values. For sodium in *Morus alba* 280 ± 3.5 mg / 100 g FW and in *Morus nigra* 272 ± 5.32 mg / 100g FW, and for magnesium in *Morus alba* $240 \pm 3,905$ mg / 100 g FW and in *Morus nigra* 240 ± 3.51 mg / 100 g FW. Iron was also identified in *Morus alba* 73.0 ± 2.6 mg / 100 g FW and in *Morus nigra* 77.6 ± 1.98 mg / 100 g FW. It can be mentioned that all the values shown are highlighted to argue the antioxidant and nutritional action of *Morus* species. The

registered values are different depending on several factors such as the type of soil, the area where the plant is grown, the local climate, etc.

Conclusions

The bioactive principles identified in the species *Morus alba* L. and *Morus nigra* L. make this plant particularly useful. Along with its importance as food for silkworms, knowing the beneficial actions for the human body is an important step to capitalize on the health benefits of *Morus*. Phytotherapeutic treatments based on extracts from leaves and fruits of *Morus nigra* L. and *Morus alba* L. species are supported by the chemical compositions of the vegetal products and are verified by their use over time.

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The importance of Doppler ultrasound in high risk pregnancies at Gynecological Obstetric University Hospital “Mbretëresha Geraldine” Tirana, Albania

Dritan Shpati

Gynecological Obstetric University Hospital “Mbretëresha Geraldine”/ Turin
University, Italy

Abstract

Doppler ultrasound of utero-placental circulation is used in our clinic for improving pregnancy outcome. The routine use of Doppler ultrasound includes low risk pregnant women and high risk pregnant women. The high risk status of maternal conditions are associated with increased perinatal mortality and morbidity. The fetal growth occasionally creates confusion with being small for gestational age. In our clinic we are using methods for the assessment of fetal wellbeing in high risk pregnancies such as fetal cardiotocography, biophysical profile and Doppler ultrasounds wave forms in the umbilical artery. The aim of this study was to assess the effect of Doppler ultrasound used to high risk pregnancies on Gynecological Obstetric University Hospital “Mbretëresha Geraldine” for the period since January 2019-March 2022. Materials and methods: We have controlled data from the patients files during these past years. Included criteria was high risk pregnancy women, small fetus for gestational age and comorbidity of pregnant women such as diabetes, hypertension, autoimmune diseases etc. We have used SPSS 25. Results: The use of Doppler ultrasound in high risk pregnancies was associated with a reduction of perinatal death in 87% of the cases from a total number of women of 275. During these 2 years of study the Doppler ultrasounds have provided some circumstances that reduced the need of hospitalization and additional fetal monitoring however this was not too high in our clinic from 15-17%. In addition, that examination with Doppler has found data that can interfere within protocols that call allow improvement from unit to unit in the same hospital. Discussion: Nowadays ultrasound technology has become more and complex due to the fetal circulation problem and clinical practice standardization in fetal medicine units. It is crucial that benefits from this new methods reduce in an appropriate interventions harm of the fetus etc. The importance of Doppler ultrasound in routine practice has created to our university clinic a screening tool in all pregnancies, not only with high risk pregnancies. Conclusion: Doppler ultrasounds reduce significantly the risk of perinatal deaths and obstetric interventions in high

risk pregnancies at Gynecological Obstetric University Hospital “Mbretëresha Geraldine”.

Keywords: Doppler ultrasound, high risk pregnancy, comorbidity, cardiotocography, pregnancy.

Only Humanities Education Will Help Future Engineers Avoid Extinction

Edgardo Maza-Ortega

Universidad del Bío Bío

Abstract

Traditionally, education was considered a process in which the main protagonist was the teacher, the only bearer and guarantor of knowledge, where the communicative relationship established was unidirectional, the students neither said anything nor expressed any opinion. This proposal shows how the humanities offer a solid support to understand and face social and personal decisions as well, especially looking at Chile although, we know, these situations are not only local. It reveals the change that occurs in a university course when using narratives, which allows facing monumentalism in the classrooms, considering that, in most of them, classes are still being held in a traditional way without taking into account what the students think about the topics covered in the courses. The research is within the qualitative method. The results obtained allow to establish the influence of the course on the learning strategies used by the students, as stable learning indicators. Also, to provide suggestions, in education, through the humanities, so that future citizens escape the disastrous results of the studies of the Organization for Economic Cooperation and Development (OECD) which indicate that a large number of Chileans (53% of adults, but 84% of the country) do not understand what they read, becoming functional illiterates, moving away from the understanding of their social, cultural and historical environment. The above reinforces the idea of a country that can be had. This situation, which has occurred systematically, for different reasons, is what has led, for decades, to a situation of abuse, on the one hand, and weariness and anger in a large part of society, on the other. This is neither new nor local; on the contrary, social discontent has been occurring in different countries for at least thirty years. We share a didactic experience in the application of narrative diaries as a pedagogical tool in the subject of Television, Culture and New Customs, held in the first semester of 2021. Through the narrative diaries, students are expected to reflect critically on their past, that of his immediate surroundings and his society so that, with this background, their present can be explained in a clearer way. The narrative diary used in this experience is made up of three questions (Testimonial Perspective: what happened and what happened to you?) How did they experience it in class? How did other people experience it? / Personal Perspective: Why was this

situation relevant and / or meaningful to you? / Professional Perspective: How has the experience transformed the view of the profession?). The subject is developed using collaborative techniques forming small groups of work which shows the direction to follow in the subject, around which are structured a series of more limited problematic situations, which allow to address the different contents of it during the semester. Students are motivated and think favorably about its implementation.

Keywords: Humanity, Education, Extinction.

How to Compute the Gradient of the Analytically Unknown Value Function

Malkhaz Shashiashvili

Kutaisi International University

Abstract

It is well known that vast majority of the real-world optimization problems cannot be solved analytically in closed form since they are highly nonlinear by their intrinsic nature. The basic observation: The value function $V(x)$ of the optimization problem is often convex or concave in multidimensional argument x (or at least semi convex or semi concave). Therefore, we should use the advantage of convexity to construct convergent numerical approximations to $\text{grad } V(x)$. Suppose for simplicity that $V(x)$ is convex. Our basic idea: Replace the approximation $V(h,x)$ by some convex approximation $C(h,x)$ in a hope that the latter one will better imitate the shape of the unknown convex function $V(x)$ and hence the gradient $\text{grad } C(h,x)$ can be announced as the reasonable approximation to the unknown $\text{grad } V(x)$!.

Keywords: compute, gradient, analytics, value, function

Logistics of Information Systems as Important Factor of Performance - Case Study Durres Port

Eng Eli Vyshka

“Aleksander Moisiu” University, Faculty of Professional Studies, Durres

Abstract

Transport is a sector of great importance for the entire Mediterranean area. Durrës port is the main connecting port of Albania by sea with the world. The need for closer coordination and information (on-line access) is of paramount importance in almost all modern industries, especially in the transport and logistics industries. As a condition for increasing the efficiency in maritime transport and the approach of the port of Durres as a logistics center is the improvement of the standards communication and information. During the last 10 years, in the port of Durres investments have been made in this field. Information and communication systems ICT for the automation of operations as well as control and security in the port, in accordance with the ISPS security code, are LAN / WAN network infrastructure, wireless as well as security system and entry-exit protection, "e-Transit & e-Boarding" systems, automatic control and weighing system (WIM-weight in motion), management system ESRI - GIS editor and web GIS View for consulting GIS information on APD, JDE-Oracle Edwards Enterprise One financial administration, electronic invoicing and inventory system, maintenance and warehouse management system (Main Saver), parking management system, multimedia electronic information board system, system for real-time monitoring of the position of ships in the rada (sea shore) and aquarium (KRIO). The Harbor Master of Durres uses VHF satellite radio, AIS equipment, AIS INLINE, NAVTEX and official e-mail with positions. The constant increase in maritime traffic also increases maritime safety risks. Due to ongoing warnings related to passengers, illicit drug trafficking, terrorism and other criminal acts, the issue of security is a key priority for ports and ships, along with safety and prevention of marine pollution. The port of Durres has adopted modern technology and information systems. All of these systems need to be interconnected into a single e-platform platform dedicated to logistics process management and its benefits such as developing an accurate and up-to-date port organization infrastructure to support reorganization of ports, their role and impact for a green, sustainable and safe solution for Albanian ports, which elaborates the analysis between the ports for the development of a common market of the northern Adriatic.

Keywords: Information and communication systems, port, transport, logistics

Balancing 'Risk Awareness' and 'Pandemic Worry'? Evidence from Covid 19

Vilaplana-Prieto, C.

Faculty of Economics and Business, University of Murcia, Spain

Abstract

Few studies have explored how health system trust affects adherence to recommendations amidst the COVID-19 pandemic (staying at home, not attend social gatherings, keeping a distance of at least 2 meters with people, informing others if having symptoms and washing hands frequently). This paper contributes to this question estimating a difference-in-difference strategy using two datasets of 28 European countries before-after the first wave of the pandemic combined with regional level epidemiologic data. To take into account the level of risk inherent in each country to face a health emergency, countries are classified according to the Inform COVID-19 Risk Index. (High risk (HR): Bulgaria, Czech Republic, Hungary, Italy, Romania, Slovakia, Spain, Ukraine; Moderate risk (MR): Austria, Belgium, France, Greece, Ireland, Portugal, United Kingdom; Low risk (LR): Denmark, Finland, Germany, Netherlands, Norway, Sweden, Switzerland). The announcement of restrictive measures increases the probability of staying home and not attending social gatherings by 8pp in LR countries (not significant in the other groups). The probability of maintaining social distance increases by 10.5pp in LR countries on (compared to 1.4pp in MR countries and a non-significant effect in HR countries). Unlike the other two groups, HR countries do not experience an increase in the probability of informing people if having symptoms. Frequent hand washing is the only behaviour which increases for three groups of countries. Restrictive measures do not appear to have the desired effect in terms of raising awareness of the need to bend the pandemic curve. In LR countries, they provide an incentive to comply with safety measures, but this may increase stress and anxiety. In HR countries, greater compliance with health recommendations is not generally appreciated.

Keywords: COVID-19, trust, risk, compliance, health recommendations.

Themes: Health Communication and Health Information Technology, Health Economics, Communicable Diseases

Is Masstige the new luxury? Factors driving conspicuous consumption of Masstige fashion among the youth in Africa

Marike Venter de Villiers

University of the Witwatersrand

Abstract

The luxury industry continues to grow, especially in developing countries like China, India, South America and Africa (Barrera & Ponce, 2020), with South Africa leading the luxury fashion market in Africa (Kenneth, 2019). This is largely due to the rise of the middle-class consumer who seek opulence and aspire to have lavish lifestyles by spending their money on luxury products. This phenomenon has engendered a new category of luxury products called 'masstige' products (Kumar, Paul & Unnithan, 2020). Masstige is popularly known as high-quality products that are financially accessible to a large segment of the middle class consumer (Das, Saha & Balaji, 2021). This study focused on Millennial consumers, and one hundred and fifty-three (153) participants were asked to complete an online survey. Millennials are confident, ambitious, achievement-orientated, tech-savvy and crave attention (Kane, 2019). They have been exposed to technology and social media from a young age, and as a result, have created an illusion of what the 'ideal' life should look like. Conspicuous consumption is a growing phenomenon in South Africa as young consumers are increasingly seeking luxury goods as a result of their exposure to social media (Dubihlela & Dubihlela, 2016). This study therefore aimed to investigate the factors that influence conspicuous consumption of luxury fashion brands amongst Generation Y consumers. By means of a proposed conceptual model, five hypotheses were tested, namely materialism, peer pressure, self-brand congruency, social status, self-brand congruency, and it's influence on conspicuous consumption. It was therefore quantitative in nature and the questionnaire adopted 5-point Likert scales where various statements were adapted from existing literature to ensure maximum credibility and reliability of the study. The data was analysed using Structural Equation Modelling (SEM) and path modelling to test the hypotheses. This study provides masstige fashion brands with a better understanding of Generation Y consumers and their brand consumption. It further provides insight into how masstige brands can more effectively target this target market while focussing on the most prominent factors that influence conspicuous consumption.

Keywords: Masstige, fashion, Africa, conspicuous consumption, Millennials

Education challenges for the Rohingya Children in Bangladesh

Tania Hossain

Faculty of Letters, Arts and Sciences
WASEDA UNIVERSITY
1-24-1 Toyama, Shinjuku-ku,
Tokyo 162-8644, Japan

Abstract

Almost one year have passed 700,000 Rohingya fled violence in Myanmar's Rakhine state, education delivery in 27 Refugee camps in Bangladesh remains a significant challenge. This study looks at the main barriers to fulfilling the Right to Education among Rohingya refugees, identifying the key obstacles and proposes recommendations for fulfilling this in the long term. *Rohingya* people neither understand Bengali dialect nor Bengali people understand *Rohingya* dialect. Those who do have access to education getting some non-formal education inside the camp. In the camp, they attend sessions for about two hours per day at grade levels far below their age. NGO people are managing those classes. Education is recognized as a universal human right. The United Nations Convention on the Rights of the Child (UNCRC) accords that each child has the right to education (UNCRC Article 28). Similarly, the UNHCR guidelines on protection and care for refugee children and young people proclaim to free and compulsory primary education, secondary education (general or vocational) available to all, and higher education "on the basis of capacity". Educational intervention for refugee children and young people thus must meet appropriate standards of educational opportunities considering possible intersectionality including gender, access, quality, curriculum, relevance, and language. Unfortunately, Rohingya children in Bangladesh are not enjoying that right. This research will provide some solutions to the present problems. The four research questions of this research as follows- a. What are the policies that the government is taking to protect the education rights of Rohingya children? b. What are the main problems of this policy? c. What kind of education and language policy would be best for Rohingya children? The purpose of this research is to describe and examine the present educational situation of Rohingya children in Bangladesh. The emphasis will be on the medium of instructions in terms of language use in the non-formal camp classrooms. This research will provide to the researchers inside from the Rohingya camp of Bangladesh regarding the language and education policy of Rohingya children and also help them to understand the complexities and difficulties that exist

in the educational system in Bangladesh. This research may draw the attention of the policy planners to formulate a policy that would support Rohingya children. It is vital to give importance to Rohingya children's language and education policy. As mentioned earlier that very few researchers have focused on the Rohingya children's education policy and practice issue. Most of the researchers focused on education and mental health issue. This research is unique at this point.

Keywords: Education, human rights, Bangladesh, Rohingya and Policy

Engaging Conversations Around Aesthetics: a Study into Feminine Beauty Ideals in Pakistani Advertisement Discourse

Mehreen Umar

Post-Doctoral Fellow at Technische Universität Berlin,
Germany <https://www.tu.berlin/en/> (2022)

PhD (Linguistics) from FJWU Pakistan (2018)

MPhil (English Linguistics) from FJWU Pakistan (2012)

Assistant Professor of English
Government Viaqr-Un-Nisa Graduate College, Rawalpindi, Pakistan

Abstract

The study of advertisement texts along with their linguistic and extralinguistic features in the realm of Pakistani discourse of advertising offers a significant dimension in exploring how conversations around aesthetics are held and how a certain narrative of beauty centering essentially on femininity is created and represented in Pakistani advertisement discourse. In this context the current research focuses on exploring the linguistic and semiotic features used in the advertisement discourse of Pakistan by various cosmetic brands on Facebook. The purpose is to examine the conversations held around aesthetics and to have an insight into the contemporary paradigms of beauty in Pakistan. The data for the present research consists of the advertisement texts shared by three different cosmetic brands on their respective official Facebook pages. To study the linguistic and semiotic features of the advertisement texts and to examine how the feminine is portrayed in these advertisements with respect to attitude, style, identity, outlook and manner, a socio-semiotic approach to discourse analysis is used. The findings indicate that a certain feminine beauty image and aesthetic narrative is created and circulated by the advertising text producers which is based on their respective perceptions of feminine beauty ideals. These beauty ideals predominantly embody a fair skin complexion, straight hair, youth and glamor.

Keywords: *Discourse analysis; advertisement discourse; aesthetics; feminine beauty ideals; beauty narrative; cosmetic industry*

A Production Line Optimization Model to Improve Efficiency in a Motor Vehicle Factory

Ugur Bac

Department of Industrial Engineering, Faculty of Engineering, Atilim University,
06836 Ankara/TURKEY

Abstract

Assembly lines are one of the most crucial part of any manufacturing company, especially in the motor vehicles factories. Assembly lines are stations in which pieces are systematically distributed among stations and semi-finished products are sequentially added together to form the final product. Because of the disparity in labor and equipment in assembly lines, it's difficult to achieve a balance between the workstations since the quantity and types of faults vary at different speeds, resulting in bottlenecks in the system. The assembly line studied in this paper had different occupancy rates in stations that causes a decrease in efficiency. While bottleneck problem occurs at some stations, some other stations were idle most of the time. Line balancing problems consist on assigning tasks to stations and/or workers in a restricted way. The problem of assigning operations to stations is formulated with the objective of minimizing the number of stations used to meet a target cycle time, or with the objective of minimizing the cycle time given a predetermined number of stations. In this study, a mathematical optimization model has been developed to balance the occupancy rates at workstations, to eliminate the bottlenecks, to reduce the occupancy rates at the stations, and to increase the station's total efficiency in a motor vehicle factory in Turkey. As a result, it is observed that bottlenecks are eliminated, cycle time of the assembly line is decreased and total efficiency of the line is increased considerably by distributing the operations to the stations in a more balanced way.

Keywords: assembly line, bottleneck problem, line balancing, mathematical modeling, utilization rates.

Interpretation of VP Ellipsis Sentence by Japanese Learners of English as a Foreign Language

Akihiro Ito

Seinan Gakuin University, Japan,

Abstract

The present study investigated which properties of verb phrase (VP) ellipsis sentences determine their semantic interpretation among Japanese learners of English as a foreign language. It is generally accepted that VP ellipsis sentences (example: Taro washed his car, and Jiro did, too.) have two possible interpretations: (a) a coreferential (CR) interpretation, in which Taro washed Jiro's car, or (b) a Bound Variable (BV) interpretation, in which Taro washed his own car. Recent research has suggested that such properties of the possessed noun phrase (NP) in VP ellipsis sentences as (1) alienability (alienable/inalienable) and (2) animacy (animate/inanimate) trigger the choice of interpretation of VP ellipsis sentences. The results of an interpretation test and questionnaire on alienability conducted with 77 Japanese learners of English indicate that animacy is the primary factor determining the interpretation when the possessed NP is inanimate, while the degree of 'empathy' conditions the choice between BV and CR when the possessed NP is animate. As a consequence, 'the animacy-empathy interaction hypothesis' is proposed in the concluding remark. Directions for further research on VP ellipsis sentences are also discussed.

Keywords: VP, sentence, comprehension, animacy, alienability, empathy

Development of Micro-Mobility Sharing Services in Smart City

Yelena Popova

Transport and Telecommunication Institute, Riga, Latvia

Diana Zagulova

Baltic International Academy, Riga, Latvia

Abstract

The concept of smart city addresses numerous issues, connected with the increased challenges for urban environment in terms of heavy traffic flows, high level of pollution, increased social problems within the city. One of the opportunities for solving the challenging and demanding issues of smart city is sharing economy; another opportunity is the development of micro-mobility, capable of optimising the traffic flows and decreasing the negative impact on ecological situation in smart city. This research studies the attitudes of city residents towards using the e-scooter sharing services as an alternative to the conventional transport. The research applied a PLS-SEM analysis performed in SmartPLS3.7 software. The data were collected via surveying the residents aged 18–35. The developed model uses some of traditional UTAUT model constructs, such as “intention to use”, “anxiety”, “attitude toward use”, “effort expectancy”, and “social influence”. Nevertheless, the authors introduce the new unique variables “internal uncertainty”, “Job-To-Be-Done” (JTBD), “e-scooter design”, “experience”, “perceived safety”, “infrastructure quality”, and “motivation to physical activity”. The principal result of the study is identification of latent variables, affecting either directly or indirectly the intention to use e-scooters in the future in the city environment and/or to use sharing services. The authors have determined that these variables are “attitude towards sharing”, “anxiety”, “internal uncertainty”, “JTBD”, “and new way of thinking”. This research has a substantial practical value for all stakeholders, including businesses and municipal authorities. The comprehension of the drivers of residents’ behavior and decision-making process are important for the advancement of the smart city. The elaborated recommendations allow developing e-scooter sharing services and contribute to the improved city environment.

Keywords: smart city, micro-mobility, e-scooter sharing, PLS-SEM, influencing factors, barriers to e-scooter sharing, JTBD

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Study Programs of Applied Mathematics and Data Science on Faculty of Sciences at University of Novi Sad and Internationalization of Higher Education

Danijela Rajter-Ciric

Tatjana Pivac

Faculty of Sciences, University of Novi Sad

Abstract

Internationalization of higher education is a process that improves the quality of studying, and higher education institutions through internationalization improve the quality of institution and the quality of study programs. Participation in the European Union's programs for cooperation in the field of education and science, as well as membership in international associations, contribute significantly the internationalization of higher education. Here we represent the internationalization of our faculty through the master study programs of Applied Mathematics and Data Science.

Keywords: Data Science, Study Programs.

Factors related to the demand for orthodontic treatment

Elona Kongo

Albanian University, Faculty of Medical Science, Department of Dentistry, Tirana,
Albania

Abstract

Orthodontic treatment provides patients with better aesthetics and function. From the orthodontist point of view both aesthetics and function are among treatment objectives. For the patients certainly is better facial appearance though very often this is the main factor for what patients seek orthodontic treatment. Aims of this study was: To evaluate factors that impact the demand for orthodontic treatment such as age, gender severity of malocclusion. Records belonging to 230 patients under orthodontic treatment were analyzed to establish at what age, which gender prevails. It was also evaluated malocclusion with regard to skeletal class. **Results:** From 230 records was found that 156(67.8%) were females. There was a range from 8 to 33years old. The majority of patients as evaluated regarding age was 13-17 years old. Malocclusion features of the sample revealed 59% (135 patients) skeletal class II, 32% skeletal class I, 9.1% skeletal class III. **Conclusion:** Results of this paper indicate that females require more often orthodontic treatment than males. This finding is not surprising since females compared to males are more addicted to better facial appearance. Adolescents were the majority of patients under orthodontic treatment indicating the impact this age period especially as related to dentofacial appearance.

Keywords; orthodontic treatment, malocclusion, facial appearance

Fiber Reinforced Polymer (FRP) Materials and Their Impact in Structural Weight Reduction of the Vessels

Mirela KOCI

University "Ismail Qemali" Vlore

Faculty of Technical Science and Natural Sciences

Department of Mechanical Engineering and Maritime Technologies

Abstract

The demand for large high-speed marine vehicles has been increased last years not only for luxury vessels but also for passenger/vehicle ferries. In these vessels, structural weight is of great importance; lighter weight leads to greater speeds, payloads, and/or fuel economy. Fiber reinforced polymer (FRP) materials offer potential savings in structural weight and have been successfully employed in the construction of a variety of boats and small ships. However the current wet lay-up production techniques have a number of disadvantages; construction of a mould is both expensive and time-consuming, storage of the mould requires substantial space (often at a premium in modern shipyards), whilst emissions from the polymer resins during the curing process can have significant health and safety implications for the workforce. The adoption of a construction technique utilizing standard parts based on pre-formed components could reduce or even eliminate some of these disadvantages. Engineering design and 3 D modeling can prevent and addressed previously these problems. The paper present 3D simulation in Solid Work software taking advantage in weight and stress loads analyses, giving recommendation about the most effective composite materials to be used in vessels construction.

Keywords: composite materials, structure weight, Fiber reinforced, 3 D simulation, Solid Work

The Impact of Different Strength Exercises on the Athlete's Jumping Ability

Rigerta Selenica

Sports University of Tirana, Albania

Faculty of Movement Science

Department of Education and Health

Abstract

Introduction: Jumping ability is a strong indicator of an athlete's physical parameters in many sports disciplines. Trainers are continuously on the lookout for the most effective approaches for improving the parameters of vertical jump. The research for methods to improve vertical jump capacity (VJC) is linked to the expectation of success, and as a result, the vertical jump is linked to success in a lot of sports. **The aim** of the study was to compare changes in jumping parameters under the effect of different strength training methods. **Methodology:** This literature was selected by different research sectors that are based on the internet and books. The study was conducted with 80 subjects, all students of the "Sports University of Tirana". Students were separated into four groups. The average age of the participants was 19–20 years old. In our study, we involved three experimental groups and one control group. To collect data for contact time and vertical jump height, the Leonardo Mechanograph® GRFP standard variant of STD is used. **Results and conclusion:** The results of the jump indicators have changed under the effect of the training programs used, compared to the control group for 12 weeks. Through the analysis, changes in the values of the indicators of vertical jump height and ground contact time reaction were identified. All three training models have shown effects on improving jumping ability, but based on the significance of the results displayed, the method of maximum strength and plyometric exercise showed greater impact in our study.

keywords: *strength, methods, exercise, testing, jump, evaluation*

Electromagnetic Absorption Shielding of Rubber Magnetic Composites

Ján Kruželák

Andrea Kvasničáková

Ivan Hudec

*Department of Plastics, Rubber and Fibres, Faculty of Chemical and Food Technology,
Slovak University of Technology in Bratislava, Radlinského 9, 812 37 Bratislava,
Slovakia*

Rastislav Dosoudil

*Department of Electromagnetic Theory, Faculty of Electrical Engineering and
Information Technology, Slovak University of Technology in Bratislava, Il'kovičova 3,
812 19, Bratislava, Slovakia*

Abstract

In the past few decades, the modernization in the field of science and technology has created a new kind of pollution, i.e. electromagnetic interference (EMI). EMI is the interference of one electromagnetic signal produced or received by another electronic device. As a consequence, one electronic element adversely affects the other's performance. With the rapid development and rejuvenation of gadgets, there is a steady increase in the electromagnetic pollution. Composite materials filled with ferrite particles based on polymer matrix are currently the subject of intensive research due to their ability to efficiently shield electromagnetic radiation. Acrylonitrile-butadiene rubber was used as rubber matrix. Rubber composites were prepared by incorporation of magnetic soft manganese-zinc ferrite. Besides the rubber and the filler, the rubber compounds contained only ingredients needed for the vulcanization process. The contents of these raw materials were the same in all rubber formulations, only the type and the content of filler was changed. The study was aimed at the preparation of rubber composite materials and evaluation of the influence of manganese-zinc ferrite on physical-mechanical properties and electromagnetic shielding performance of the composites. The results showed that although the tensile strength showed decreasing trend with increasing content of magnetic filler, the composites are able to efficiently shield harmful electromagnetic radiation in the selected frequency range. The biggest preference of these materials is their ability to shield the electromagnetic radiation by absorption mechanisms.

Keywords: rubber, magnetic filler, EMI shielding, absorption

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Maraging 300 Steel Subjected to Ultrasonic Fatigue Tests, at Room Temperature

Gonzalo M. DOMINGUEZ ALMARAZ

University of Michoacan (UMSNH), Santiago Tapia No. 403, Col. Centro, 58000,
Morelia, México.

Abstract

Maraging 300 steel was tested under ultrasonic fatigue regime, at room temperature and under full reversed load ratio ($R=-1$), . Hourglass shape testing specimen dimensions were obtained by modal numerical simulation, using the mechanical proprieties of this steel: density, Young Modulus and Poisson ratio. Ultrasonic fatigue tests were performed under three loading stresses: 585, 486 and 389 MPa, corresponding to high, middle and low applied stress, respectively. Fracture surfaces were analyzed with scanning electronic microscope, in order to obtain the origin and causes of crack initiation and propagation under this testing conditions. Furthermore, general conclusions were addressed concerning the ultrasonic fatigue endurance of this aeronautical steel, together with the crack initiation and propagation behavior.

Prioritizing and Ranking of Enterprise Resource Planning Selection Criteria for Railway Industry

Turan Erman Erkan

Atilim University

Abstract

Enterprise Resource Planning (ERP) is an information system which integrates all departments of organization to produce needed products and service by using labor, machines, materials and other sources efficiently. The main purpose of ERP systems is to integrate all data and processes of the company. So, it makes easy to operate complex structures. Railway industry consists of detailed and complex processes containing inventory, maintenance, scheduling, customer service and so on. Therefore, in order to be punctual and effort for operational excellence railway industry also needs to use ERP systems. Selecting ERP systems is as tough as implementing them. Before selection the criteria that the ERP systems need to have should be determined. After determination of the criteria in order to rank them between each other some tools like Multi Criteria Decision Making (MCDM) is used. The research ends with prioritizing and ranking of criteria by MCDM method and compared with other industries.

Keywords: enterprise resource planning, information systems, railway industry, multi criteria decision making, information system selection

Party Platforms and Voters

Lorenc Ligori

Abstract

In an election campaign the political parties present their platforms and the candidates. Party platforms are often detailed and cover a range of specific issues. In principle they help citizens to make the right choice. But various scholars today are asking the question, is it effective to build an election campaign on party platforms? The campaign that focuses mainly on the party platforms, assumes an educated voter, who can and wants to get acquainted with the platforms, and who is able to judge and reach a fair conclusion. Assuming there is such a voter, the question may be asked that given the intensity of daily life nowadays, does the voter have time to do so? And further, is there enough time during the campaign for the parties to explain and convince the voters of a set of issues which are included in a party platform? Even if the answers to these questions would be "yes", another question arises: the candidate or-platform, or more broadly the party leader or political platform? Recent election campaign experiences in various democratic countries demonstrate an increased interest in the importance of the role of the leader in the decision-making of the voters. Various studies show that other variables are also very important, such as the social and economic situation, the level of development of democracy, political traditions, party system, culture of political communication in a society, etc. An important component is the legal framework. Thus, for example in a majority system, the candidate may have an advantage over the party platform. The opposite may be true in a proportional system with party lists. The combination of the above variables is also very important. Therefore, the issue of the importance of party platforms in an election campaign should be viewed in consideration of all other factors. Party platforms are obviously important in an election, but their effect depends on the political, social and economic context in which the elections take place.

Keywords: election, platforms, leaders, voters.