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The efficiency of polycentric development strategies in the context of economic crisis. Case study – the development of Southwest Oltenia region – Romania

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Abstract. Romania's polycentric development model was elaborated by the Interdisciplinary Centre for Advanced Researches on Territorial Dynamics within the University of Bucharest and by Urbanproiect SA. The elaboration of the polycentric development strategy is based on the human settlements' classification depending on their polarisation capacity and the designing of a polycentric network, able to ensure the territorial complexity necessary to the attenuation of negative impulses from the suprasystems' level. The world economic crisis may be considered the most powerful negative impulse after the Second World War, generating major disfunctionalities at the level of fragile territorial systems. The elaboration of some specific strategies, able to take into account the new challenges given by the global world, is an important preoccupation of the decision factors in order to increase territorial competitiveness.

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Romania, polycentric development, economic crisis, territorial disparities, territorial cohesion, territorial dynamic, territorial management.

Contents:

1. Introduction

The implementation of the European Union's Territorial Agenda and of the Lisbon Agenda is to establish new coordinates of the comunitary area's development, the main objective being to create competitive economic areas, evenly distributed on the EU territory, with no differences and functional flaws between the centre and periphery, a system of human settlements classified by their development potential, interconnected in functional networks.

The development of human settlements formed by development poles is one of the major challenges of the decision factors and an interdisciplinary research

theme for the scientific world. J. Trullén and R. Boix (2005) consider the concept of polycentrism as the tendency of population and economic activities to concentrate themselves in urban nuclei which have the capacity to exert their influence upon the entire urban structure and upon the areas around them.

G. Haindl and P. Hirschler (2008) suggest that polycentric development may contribute to the balanced economic development and to the decrease of territorial disparities from the European Union's level. A. Hallgeir (2004) considers the urban network to be the spine of a territorial system, as polycentrism ensures the transmission of information which is indispensable for the efficient development at the entire territorial system's level.

The need to support polycentric networks as main principle in the regional development is sustained by the results of the detailed analyses of territorial systems, which emphasised interesting evolutions of the development coefficient as a result of the impulses from the central level. Although important sums from the state budget were allocated, these areas reacted in a different manner, developed areas became more developed, and poor areas registered an accentuation of omit economic decline. It was noticed that certain areas with significant economic unbalances, situated nearby urban centres with a significant economic dynamic, registered growth due to the development of some territorial complementarities by means of the relationships' enhancement with the development poles.

Profoundly disadvantaged areas proved their incapacity to amplify the effects of financial impulses, whereas developed areas registered a continuous development, regardless of the evolutions of the central decisional chain. This different capacity to react to the same decisional impulse advances several questions regarding the efficiency of the regional development strategies applied in Romania up to the present.

The proposed polycentric development model comprises a network of development poles, classified according to their capacity to transmit information indispensable for development within the settlements system it subordinates. The relationships between these development poles are complex, depending on the territorial complementarities which are in a permanent dynamic (Peptenatu et al., 2006, 2009a; Hołowiecka, Szymańska, 2008).

The principle of complementarity between development poles is analysed in several studies which identify a hard to predict evolution of the relationships between development poles from different levels and from the same level (Ullmann, 1956; Lambooy, 1969; Camagni, 1993; Camagni, Salone, 1993; Batten, 1995; Capello, 2000; Kloosterman, Musterd, 2001; Parr, 2004; Meijers, 2005, 2006; Zonneveld, Verwest, 2005).

The researches conducted for the elaboration of Romania's Polycentric Development Strategy emphasised the special importance of the enterprise sector within the economic dynamic of development poles, a connection which is analysed in many academic approaches (Evans, Leighton, 1989; Reynolds, 1997; Carree, Thurik, 2003; Audretsch, Keilbach, 2004; Rotefoss, Kolvereid, 2005; Grilo, Thurik, 2008).

Today the economic crisis spread at the world economy level has hard to predict implications, due to the transmission speed by means of the more and more numerous synapses which appeared together with the globalisation process. At the territorial systems' level, the economic crisis is displayed as negative impulses, which contribute to the modification of the territorial dynamic with a negative sense, producing chaos or major unbalances at the level of some systems or subsystems (Szymańska, 2000; Szymańska, Matczak, 2002; Peptenatu et al., 2009b).

Negative impulses from the level of suprasystems leave their mark firstly on the demographic dynamic of some regions, in the sense of population migration and demographic ageing (Szymańska, Biegańska, 2008; Szymańska et al., 2008; Peptenatu et al., 2009a).

In the present study we aim, without the pretention of an exhaustive approach, to elaborate a model of polycentric development able to ensure the optimate functioning of regional systems, in the conditions of some negative impulses from the suprasystems' level.

2. Material and research methods

The elaboration of the polycentric development model supposes to explain some concepts used to describe the way in which polycentric structures function. From among these, the most important are: polycentrism, polycentric development, polarisation capacity, territorial cohesion (Peptenatu et al., 2009a).

Understanding the polycentric network's way of functioning is conditioned by knowing the theoretical framework which constituted the basis of the elaboration of the territorial management model based on the growth poles theory. Polycentrism is a concept based on the idea of promoting several decision centres. In territory planning, the concept assumes a complex approach to territorial development, using as definitory instruments development poles, classified depending on their capacity to spread

a new quality in the subordinated territorial subsystems. Development poles are grouped in polycentric networks classified according to their capacity to polarise the subordinate space. Polycentric development is a development strategy of space based on promoting and implementing some policies of consolidating the development poles and growth poles network. By decisional impulses, the relationships between the polycentric network components are redefined, the strong points are improved in a superior manner, and a part of the envisaged territory's problems are solved. The analysis of the polarisation capacity and field researches identified the main polarisation directions represented on the graphic models by means of development vectors which represent as well the directions and a certain type of qualitative load of development, from the development poles of superior rank towards the subordinate ones. In identifying the role of each development pole of the polycentric network, an important role was played by the concepts of territorial competence and territorial cohesion. Territorial competence is represented by those functionalities which give particularity to the territorial system, and which impose it in the competition with the others. Functional specialisation is a determinant factor of territorial competence. The analysis of territorial competence envisaged the projections of those competences, which would allow the rural settlement to be remarked in the local settlements' network. The territorial cohesion represents the capacity of a polycentric network's components to stay together by means of developing and multiplying the relationships between them.

The polycentric development model is based on several decision levels: the capital, national development poles, regional development poles, intraregional development poles, local development poles, and growth centres (Peptenatu et al., 2006, 2009a). National development poles are the urban settlements with the largest polarisation capacity from the development regions, accomplishing the functional connection with the capital, having the role of coordinating the distribution of information from the capital to the level of the entire region. Regional development poles are urban settlements with an inferior polarisation capacity compared to national poles, consolidated by the administrative functions held in time. This category is represented by the present county seats which, due to their administrative function, are categorically imposed in the county urban systems. Intraregional development poles are represented by urban settlements which benefited from the regional context of advantages, which contributed to the increase of their polarisation capacity compared to county seats. Local development poles are urban settlements with an important role in the functioning of county networks, which contribute to the spread of development from the level of intraregional and regional poles to the local level. The importance of these poles comes from their function of redistributing information in the subordinated rural space. Growth centres are represented by rural settlements, which by the economic activities they hold, may transform into development engines for the highly disadvantaged rural spaces. Growth centres are indispensable in elaborating the strategies of polycentric development, specific for the highly disadvantaged areas. In this category there are enclosed the settlements which play a central role in the highly rural areas, which by specific strategies may contribute to the information transfer towards the periphery of the polycentric network.

The present study analyses the intensity of the relationships between the components of the settlements systems from one of Romania's seven development regions, the Development Region Southwest Oltenia. The analysis of the polarisation capacity was conducted on the basis of five criteria: demographic size and attractiveness, economic power and competitiveness, polarisation capacity by means of services belonging to the superior tertiary sector, the number of towns of inferior rank from the influence area, territorial typicality and the perspectives of supporting the consolidation of the regional settlements system. Following the aggregation of these indicators, a coefficient of the polarisation capacity was established, and on the basis of which the development poles for the Development Region Southwest were classified (Peptenatu et al., 2009a).

The impact of the economic crisis was analysed by elaborating a database comprising the number of dismissals for each month, at the county and region level, considered at national averages.

In elaborating the polycentric development model, a special attention was given to the elaboration of a complexity scale for the polycentric structures, the degree of complexity ensuring the territorial systems a certain reaction to negative impulses from the level of suprasystems, in the sense of a larger and larger attenuation, once the complexity of polycentric networks increased. The model is based upon the development of some urban regional systems which represent engines of development for the subordinate urban and rural systems (Peptenatu, 2009a).

Within the polycentric development model, a special attention was given to highly disadvantaged

areas, where it is necessary to constitute some growth poles able to structure the space functionality in an optimal way. On the basis of multicriterial analysis, there were identified the highly disadvantaged areas, within which settlements with a central role function were identified; these settlements must contribute to the propagation of development in these fragile geographical areas.

3. Research results

Depending on the polarisation capacity coefficient, the development poles from the Development Region Southwest Oltenia were divided into several decisional stages. The proposed polycentric development model consists of four decisional stages, each of them including hierarchised systems of human settlements, the information transfer between stages being ensured by the national, intraregional and local development poles, which function as hubs which redistribute the information indispensable for development (Table 1): (a) the national level which includes the capital and the national development poles. In the Southwest Development Region Oltenia, the town Craiova is the pole of national importance which has the role to coordinate the polycentric network Southwest; (b) the regional level includes: the national, regional and intraregional development poles (Drobeta Turnu Severin, Râmnicu Vâlcea, Slatina și Târgu Jiu); (c) the county level includes the intraregional and local development poles; (d) the local level includes the local development poles and the growth centres. At this development level, there can be identified settlements having a central role and which can contribute to the transmission of information towards the local level. The functioning of this polycentric network is conditioned by series of initiatives at judicial and institutional level, able to ensure a specific status for each type of development poles.

The impact of the economic crisis upon the accentuation of territorial disparities was quantified by the analysis of the evolution and distribution of the number of unemployed people and dismissals in the period 2008–2009 at the national level, a period in which in Romania the impact of the economic crisis was strongly felt (Fig. 1, Table 2).

At the national level, once the economic crisis appeared, a strong tendency to diminish the economic activity in these centres was noticed, with immediate effects upon the subordinate geographical areas. The first signs of the economic crisis were noticed in the sector of automobiles and auto components, where

Table 1. The classification of development poles depending on their polarisation capacity

A	B	C	D
Craiova	Dolj	53.08	a
Ramnicu Valcea	Valcea	52.24	b
Targu Jiu	Gorj	52.15	b
Dr. Tr. Severin	Mehedinti	51.96	b
Slatina	Olt	51.95	b
Caracal	Olt	51.86	c
Filiasi	Dolj	51.86	c
Motru	Gorj	51.85	c
Calafat	Dolj	51.84	c
Dragasani	Valcea	51.83	c
Orsova	Mehedinti	51.82	c
Segarcea	Dolj	51.62	d
Babeni	Valcea	51.58	d
Rovinari	Gorj	51.56	d
Novaci	Gorj	51.40	d
Baia De Arama	Mehedinti	51.38	d
Tg. Carbunesti	Gorj	51.37	d
Turceni	Gorj	51.37	d
Bumbesti-Jiu	Gorj	51.32	d
Corabia	Olt	51.28	d
Strehaia	Mehedinti	51.25	d
Balcesti	Valcea	51.24	d
Bals	Olt	51.18	d
Scornicesti	Olt	51.17	d
Vanju Mare	Mehedinti	51.17	d
Bailesti	Dolj	51.16	d
Baile Govora	Valcea	51.16	d
Brezoi	Valcea	51.14	d
Ticleni	Gorj	51.13	d
Calimanesti	Valcea	51.09	d
Dabuleni	Dolj	51.09	d
Horezu	Valcea	51.08	d
Bechet	Dolj	51.07	d
Baile Olanesti	Valcea	51.06	d
Berbesti	Valcea	51.05	d
Tismana	Gorj	51.03	d
Draganesti-Olt	Olt	50.97	d
Piatra-Olt	Olt	50.97	d
Ocnele Mari	Valcea	50.91	d
Potcoava	Olt	50.90	e
Plenita	Dolj	50.89	e
Corcova	Mehedinti	50.89	e
Patulele	Mehedinti	50.87	e
Jiana	Mehedinti	50.86	e
Radomiresti	Olt	50.82	e

Explanation: A – development poles; B – county; C – the coefficient of the polarisation capacity; D – category; a – national development pole; b – regional development pole; c – intraregional development pole; d – local development pole; e – growth centre

Source: Peptenatu et al., 2009 b

Table 2. The evolution of unemployment rate in Romania (%)

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	A
1991		0.6	0.8	1.1	1.4	1.8	1.9	2.1	2.3	2.3	2.4	3.0	1.8
1992	3.5	3.9	4.4	3.9	4.1	4.5	4.8	5.9	6.7	7.4	7.9	8.2	5.4
1993	8.3	9.0	9.3	9.2	9.1	9.1	9.1	8.9	9.1	9.3	9.6	10.4	9.2
1994	11.0	11.4	11.5	11.3	11.2	10.8	10.7	10.5	10.6	10.8	10.8	10.9	11.0
1995	11.0	11.1	10.9	10.5	10.3	9.9	9.7	9.5	9.2	9.0	8.8	9.5	10.0
1996	9.9	10.1	9.8	8.8	8.2	7.6	7.0	6.6	6.3	6.3	6.1	6.6	7.8
1997	7.0	7.5	7.5	7.3	7.1	7.3	7.2	7.1	7.2	7.6	8.1	8.9	7.5
1998	9.3	9.7	9.6	9.4	9.2	8.9	8.8	8.7	8.7	9.0	9.5	10.4	9.3
1999	11.2	12.0	12.0	11.7	11.5	11.4	11.3	10.9	10.9	10.8	11.1	11.8	11.4
2000	12.3	12.5	12.2	11.9	11.5	11.2	10.8	10.5	10.2	10.2	10.3	10.5	11.2
2001	10.7	10.7	10.3	9.8	9.2	8.7	8.3	8.0	7.8	7.7	8.0	8.8	9.0
2002	12.7	13.5	13.4	11.4	10.5	9.9	9.2	8.7	8.4	8.2	8.1	8.4	10.2
2003	8.6	8.8	8.6	8.0	7.6	7.3	7.2	6.8	6.7	7.0	7.2	7.4	7.6
2004	7.7	7.8	7.8	7.4	6.9	6.6	6.3	6.2	6.1	6.1	6.2	6.3	6.8
2005	6.4	6.3	6.1	5.8	5.6	5.6	5.6	5.7	5.6	5.7	5.7	5.9	5.8
2006	6.1	6.2	6.1	5.8	5.4	5.2	5.0	5.0	4.9	5.1	5.1	5.2	5.4
2007	5.3	5.1	4.8	4.5	4.1	4.0	3.8	3.9	3.9	4.1	4.2	4.1	4.3
2008	4.2	4.2	4.1	3.9	3.7	3.7	3.7	3.8	3.9	4.0	4.1	4.4	4.0
2009	4.9	5.3	5.6	5.7	5.8	6.0	6.3	6.6	6.9	7.1	7.5	7.8	6.3
2010	8.1	8.3	8.36	8.07	7.67								8.10

Explanation: I – January; II – February; III – March; IV – April; V – May; VI – June; VII – July; VIII – August; IX – September; X – October; XI – November; XII – December; A – Yearly average

Source: The National Agency of Manpower

the first dismissals and interruption of the production on productrion time. The towns of Craiova, Pitești, Mioveni, and Timișoara were affected. The iron, steel and textile industries followed, and the towns of Botoșani and Vaslui strongly felt this shock. In the first half of the year 2009, there were announced collective dismissals in almost all counties, the most important of which were: Galați (50% of the employees from ArcelorMittal Galati), Teleorman, Dolj, Sălaj (the producers of tyre covers from Silvania and RomSteel Cord announced the reduction of over 70% of the production), Constanța, Brașov, Cluj, Timișoara.

According to the National Agency of Manpower (NAM), in January 2009 the first effects of the economic crisis appeared, under the form of the increase of the unemployment rate, from 71,523 people in December to 98,833 people in January. According to the same source, at the level of all administrative units, the number of unemployed people increased as follows: Bacău (2,500 people), Vâlcea (2,465 people), Prahova (2,280 people), Galați (1,983 people), Constanța (1,962 people), Alba (1,657 people), Neamț (1,521 people), Hunedoara (1,462 people), and Cluj (1,302 people). The highest level of unemployment

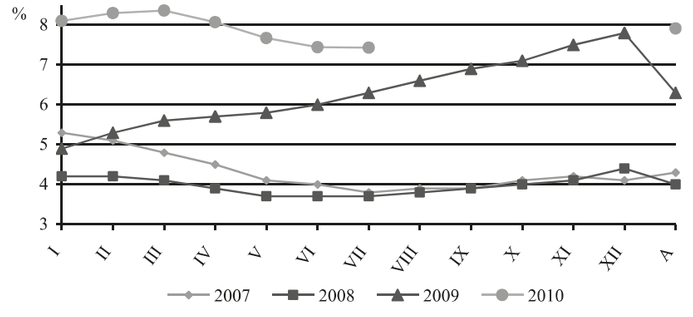

Fig. 1. The evolution of unemployment in Romania

Explanation: I – January; II – February; III – March; IV – April; V – May; VI – June; VII – July; VIII – August; IX – September; X – October; XI – November; XII – December; A – Yearly average

Source: National Institute of Statistics, The National Agency of Manpower

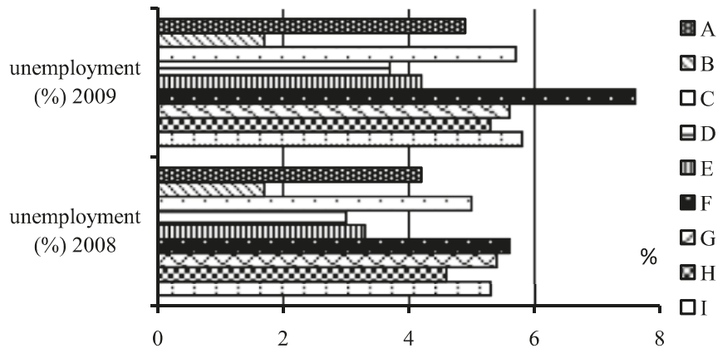

Fig. 2. Evolution of unemployment in developing regions

Explanation: A – National; B – Bucuresti; C – Centre; D – Northwest; E – West; F – Southwest; G – South; H – Southeast; I – Northeast

Source: National Institute of Statistics, The National Agency of Manpower

rate was reached in the county of Vaslui (10.3%), followed by the counties: Mehedinți (9.8%), Teleorman (8.6%), Dolj (8.5%), Gorj (8.0%), Covasna (7.9%), and Alba (7.9%).

At the level of development regions, the highest rates of unemployment were registered in the Southwest region (7.6%), Northeast (5.8%) and Centre (5.7%), where the economic decline of development poles is obvious (Fig. 2). The regions of Bucharest and Northwest, in December reached the lowest levels of unemployment rate, namely 1.7% and 3.7% respectively.

In the Southwest Development Region Oltenia, important personnel adjustments were registered, following the decrease of the production capacity on the big industrial platforms from Craiova, Râmnicu Vâlcea, Slatina, Turceni, and Drobeta Turnu Severin. Only on the industrial platform Electroputere, 500 employees were dismissed in the year 2009, as a result of the decrease of demands from abroad and fall in profit of over 75% in 2009 compared to 2008. During the same interval, the airplane factory from Craiova finished its production, half of the employees were dismissed, and the factory entered a governmental restructuring process.

All large companies registered decrease of activity and collective dismissals, which led to multiple negative effects at the level of the entire settlements system from the Southwest Development Region Oltenia, all the companies which registered major activity decrease being located in the main hubs of the regional polycentric network. For example, the decrease of the economic activities from the industrial platforms of the Slatina town of over 2,200 workers (only Alro Slatina dismissed, during this period, 1,800 workers) strongly affected the settlements network subordinated to this development pole, over 70% from the dismissed people belonging to these settlements, as their movement towards the production units involved supplementary costs.

Another development pole, Râmnicu Vâlcea, registered massive reduction of personnel, as there were dismissed, during one year, over 1,200 out of 3,800 employees, in this case over 50% representing the settlements network subordinated to this development pole. The researches done in this development region showed economic disfunctionalities in territorial profile, emphasising the need of some development strategies for the territorial complexity, making it possible to avoid the concentration of activities only in certain settlements, thus increasing the dependence of some settlements systems on a settlement or even on an enterprise.

The regional development strategies based on polycentrism may contribute to the increase of territorial complexity by supporting the increase of the polarisation capacity for certain settlements which can become a development engine. The development of these territorial poles will contribute to a higher stability of the regional system under the negative impulses from the suprasystems' level. Fig. 3 presents the model of polycentric development, elaborated according to the polarisation capacity of each settlement and to the development potential of the capacity to transmit, in the settlements network, the information indispensable to development (Fig. 3).

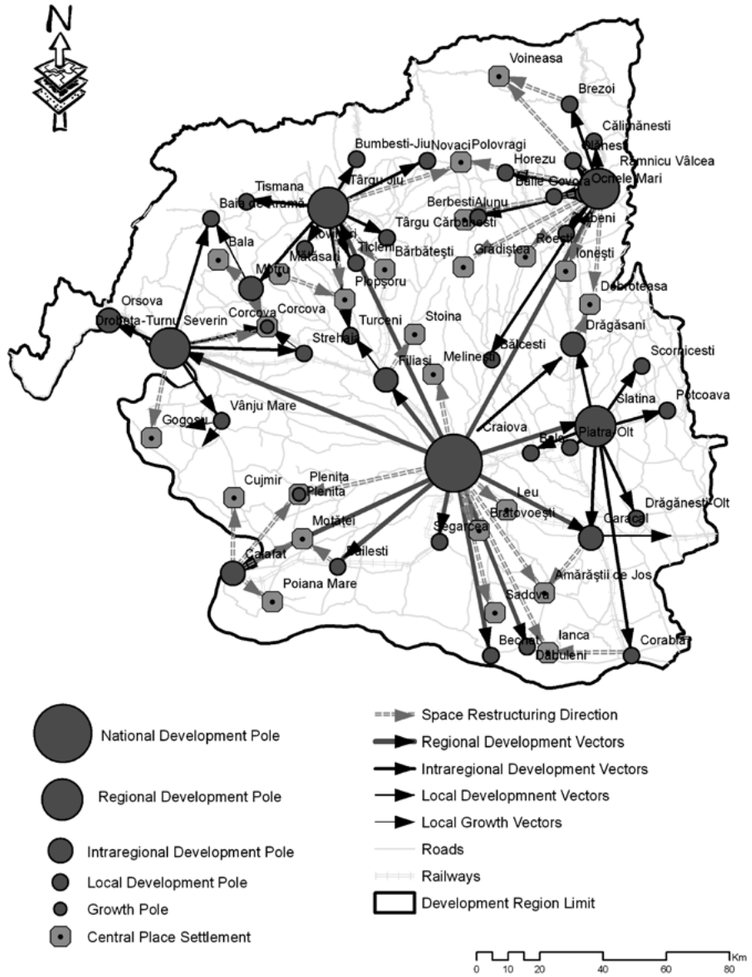

Fig. 3. The Distribution of Central Place Settlements in the Southwest Polycentric Network

Source: Peptenatu, 2009a

4. Discussion and conclusions

The analysis of the effects of economic crisis at the level of regional, county and local territorial systems, emphasises important differences depending on the development level and the functional complexity of space. If, at the level of some developed territorial systems, negative impulses have been absorbed or attenuated, in the highly disadvantaged areas, the economic unbalances determined by the economic crisis are strongly felt. In this category fall territorial systems connected to development poles by the working places offered to active population.

Detailed analyses identified a special category of spaces, situated at large distances from the development poles, which have lately registered a geographical decline and an ageing of population. These are isolated geographical spaces lacking the territorial synapses which could connect them to a polarising centre. Specifically, these systems lack the connections by which they could progress or regress, under the influences of some impulses from outside the system.

Building, by specific measures, a regional polycentric network may contribute to the decrease of territorial disparities determined by the economic crisis,

and the steps for reaching this objective contributes to a re-thinking of administrative structures, which proved incapable of an efficient transfer of information from central to local level (in the polycentric development model a new administrative level is proposed, the regional level), to encouraging local economies and creating a social economy (efficient for attenuating economic shocks at the local level), developing enterprise, and to encouraging the development of polycentric networks.

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