An "Integrated Space" Approach for the Interpretation of a Medieval Stronghold in Middle Pomerania, Poland

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Abstract

Polish archaeology, at present, adopts traditional approaches with the result that, by and large, there are only utilitarian explanations for the subject of medieval strongholds. In an attempt to open new analytical avenues, this work combines post-processual concepts applied in landscape archaeology together with the power of geographic information systems (GIS). The goal is to engage in holistic investigations of archaeological remains beyond the current emphasis on artefacts and features as isolated phenomena that are, seemingly, devoid of any large-scale contextual setting. The site of Września is therefore not just a self-contained example of an early medieval stronghold but, rather, represents an integral utilitarian and *symbolic part of the middle Pomeranian cultural landscape and its overall spatial organization. The specific research applies a viewshed analysis based on the strong suggestion that visibility and intervisibility played a highly important role with regard to the area's spatial symbolism.*

Key words: geographic information systems, landscape archaeology, medieval strongholds, Pomerania, post-processual archaeology, space, symbolism, viewshed analysis

1. Introduction

A major focus of post-processual archaeology is the concern with the meaning of space and landscape. For the following study, a fundamental notion is the belief that both individuals and communities "create" space as a social construct. Embracing this idea also defines space as an all-inclusive manifestation that is full of commonly recognized and shared symbolic content. Consequently, there is an added interpretation potential with regard to past cultures by investigating the symbolism of given spaces and/or the objects contained within. Ideally such research can supplement some of the otherwise limited archaeological assessments that are preoccupied with the identification of mainly physical and functional characteristics.

In particular, the traditional interpretation for early medieval strongholds of "the tribal period" (sixth to tenth century AD) in Poland, including the site of Września in middle Pomerania (figure 1), concentrates mainly on militaristic functions. Other potential purposes such as seats of power or cult places are, overwhelmingly, treated in a secondary fashion. Recent developments rooted in post-processual archaeology, on the other hand, provide the crucial means for a different approach with regard to the role of these strongholds. The essential impetus comes through the incorporation of space and landscape as integral parts of the archaeological record; thereby allowing strongholds to be investigated in an inclusive and more holistic manner. Further inspiration for this work is the result of anthropological research and humanistic geography (Hall 1959, Hall 1966, Tuan 1977, Cosgrove 1998) that stresses individual and collective human experiences with regard to the role of space. In other words, the topic of people and their environments is examined through the relations of meaning, value, will and emotion, and not only as rational or intellectual relationships (Grzybowski 1981:623).

The specific research tool of choice for this paper is a viewshed analysis based on the strong suggestion that visibility/intervisibility played an important role at Września micro-region. An "integrated space" approach using GIS visibility maps, in combination with a post-processual interpretation of the wider archaeological context, forms an enhanced and intriguing dataset that potentially achieves a greater understanding of the past. There is therefore a good likelihood that this stronghold, by virtue of its clear visual prominence, also exhibited a significant symbolic relationship with much of the surrounding cultural landscape features including settlements and burial mounds.

2. Landscape archaeology

In traditional settlement archaeology, the relationship between humans and their environment is understood in physical terms by the way space is exploited and utilized (Tilley 1994:7). For post-processual landscape archaeology, on the other hand, the fundamental issue is conceptualisation of space by virtue of perception, through its content in the form of environmental and cultural phenomena. However, at present, there is some considerable debate regarding what landscape archaeology should really represent (Fisher and Thurston 1999). Tilley (1994), in particular, deals with landscapes as anonymous sculptures that are perpetually created by human activity and, thus, it is never a complete process because it continually develops. He also suggests that the relation-
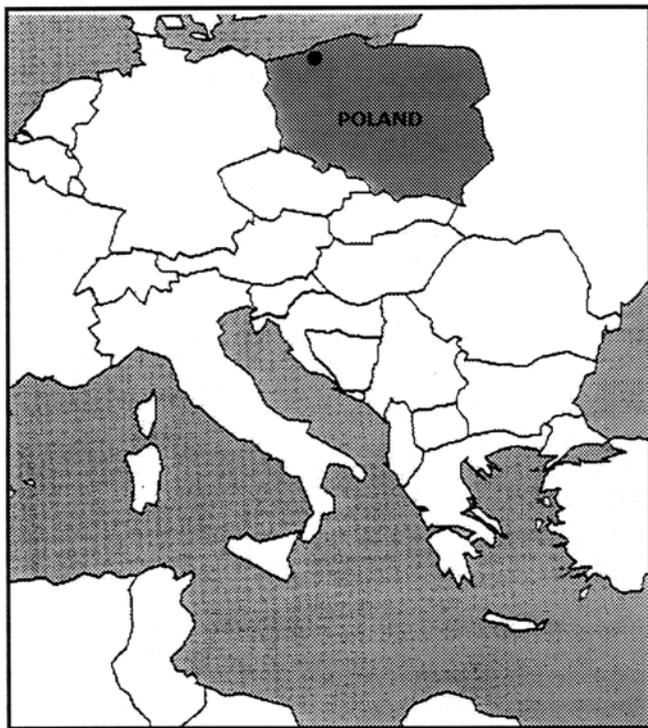
Figure 1: Location map of the Września stronghold, Poland.

ship between humans and the landscape is a dialectic and constant practice of structuralisation. The landscape is therefore a medium or intermediary for activity as well as an activity itself and is an experiential setting for the people living their everyday lives. With regard to this paper the term landscape archaeology is used to describe:

> "…a broad, inclusive, holistic concept created intentionally to include humans, their anthropogenic ecosystem and the manner in which these landscapes are conceptualised, experienced and symbolized." (Fisher and Thurston 1999:630).

3. The creation of space

It is critical to understand that based on different perceptions of the world, individual communities and groups possess and create social spaces that are unique to them in the form of an unrepeatable arrangement of spatial meanings and values. Every society develops its own space and has ways of acting and partaking within it through practices that finally lead to the creation of human spaces:

> "Man feels and understands all space from the centre of his or her own space, which is always that space created to a significant degree by man himself. Anthropomorphisation of space on the part of man cannot be completely avoided." (Cackowski 1998:41)

Znaniecki (1938), feeling that any researcher of culture should treat space with a humanistic coefficient (i.e., considering the way it is experienced by those human subjects whose culture is investigated), has specifically examined the issue of social space. In his opinion, human subjects never come across some universal, objective, unqualified, boundless and infinitely divisible space. On the contrary, the participants of a culture experience countless "spaces" that are qualitatively varied, limited, indivisible, change-

able and either positively or negatively valued. Space is therefore never a uniform or indifferent setting for all the varied forms of economic, social and cultural life in which people engage (Tilley 1994:14-117). Thus, space plays an active, often-conflicting role by perpetually creating or modifying phenomena and processes.

3.1. Space in early medieval culture

Contemporary categories of space will have nothing or little in common with other periods in the past and, consequently, we need to first address those factors that affected the creation of social spaces. As part of a whole plethora of cultural categories this would include the natural environment, technological developments, prevailing power structures and a common value system, to name a few, that in combination form the respective worldview for a given society.

According to Guriewicz (1976:168), during the early middle ages spaces would have been established and recognized through the variety of human activities (e.g., economic, religious, etc.). In this way, the experiential environment in which life took place hardly left any blank spots on a unique landscape map of events and geography. This was clearly not a static process inasmuch as "…matters blending into the landscape would blur after some time to be replaced by new meanings; they would, however, sometimes last for ages" (Banaszkiewicz 1979:988). The actual process is one where people gave names to the specific phenomena occurring within a given environment and thereby "spiritually" appropriated the natural landscapes in which they moved and resided. This allowed humans to understand the world by superimposing meaning onto space and to simultaneously create a unique cultural record for a community.

3.2. Space and value

One of the aspects emphasized as part of this research, is symbolism or, more specifically, symbolic space. Halbwachs (1970:132) argues that:

> "...when a particular group is connected to a certain section of space... then each aspect, each detail of this place has its own meaning and can be interpreted only by the members of that group."

In other words, humans create their own space and shape its function and meaning. These spaces, in turn, create the conditions for the behaviour of the people themselves. Clearly, space has not only a physical and functional character but it is also full of individual/communal symbolic references and content.

For the purpose of this work, one needs to embrace this notion that human efforts perpetually transform natural spaces into social spaces. In other words, through engagement with our surroundings we create space and bestow value-based cultural significance upon it. The mechanism for doing so depends on the specific worldviews of a given culture and the applied system of valorisation (models that change in the course of time). Niczyporuk (1998) identifies three types of valorisation pertaining to space (table 1).

Magical valorisation requires appropriate "safety measures" such as magic in order to establish one's place while, at the same time, no single place may exclusively belong to anyone. The modern type, on the other hand, is not necessarily relevant for this study

Magical (tribal societies)	Space is considered qualitative, non-homogenous and concrete (i.e., of changeable quantity, unstable, and uncertain).
Modern	Treats the human world and nature separately using categories of spheres for cultural spaces (e.g., economic, religious etc.).
Religious (magical-religious)	Space is divided into two distinct categories pertaining to the *sacrum* and the *profanum*.

Table 1: Valorisation Types for Space.

because of the functional separation into many distinct and often task-specific spheres. Religious valorisation, however, is critical for the subsequent interpretation of the Wrześnica site inasmuch as the analysis focuses specifically on the relationships between places of potentially high ritual and symbolic significance and secular areas that are not designed or used for these purposes.

3.3. Religious and secular space

Based on religious valorisation, the *sacrum* is a holy space that is separated or removed from its surroundings to form a centre of religious functions. This also means that any such site will exhibit a transcendental or a "not of this world" quality (often the location for the appearance of divinity and the centre of the world itself) while acting as a bridge between the human world and transcendence. The *sacrum* is understood as a sacred and symbolic area where only those behaviours are permitted that communicate content by "explaining" or "interpreting" the world in line with the prevailing religious and ritual beliefs. Thus, in universalistic religions, the *sacrum* is not differentiated inasmuch as the purpose of each location is identical. And, that function is to organize space and giving a comprehendible order to a culture (Niczyporuk 1998:48).

The *profanum*, on the other hand, belongs to the people and comprises the places of work and shelter – it is, essentially, the secular space where day-to-day activities are undertaken. These areas are clearly qualitatively differentiated since they vary from one to another by virtue of unique purposes and characteristics. The *profanum* also involves spaces that are generally safe while keeping in mind that this may not always be a constant state due to new and alien elements that may introduce themselves and thereby encroach upon these "mortal" areas (Ibid.: 48).

Ethnologists have for a while supported the importance of beliefs and magical practices in preliterate communities, particularly in matters requiring direct contact with nature. Bystroń (1939) generally sought to determine and conceptualise the magical factors present with regard to settlement processes:

1. Magical-religious division of space,

2. Positive/negative evaluation of taking a given direction,

3. Determining/evaluating bounds,

4. The value of a given place,

5. Identifying locations for burial sites,

6. Evaluation of the landscape and its features,

7. Presence/absence of animal and plant species.

With regard to this research, the overall degree to which the religious element in the form of superstition or magic (e.g., omens) was a decisive factor in accepting/rejecting a given site location is difficult to establish even when employing the most modern archaeological methods and techniques. Nonetheless, any magical practices would have been intended to separate the inhabited area

from the natural environment in an attempt to create a safe family abode, protected by supernatural forces. Based on works where it has been shown that religion permeates all aspects of (Bystroń 1939:32), religious valorisation of space would seem to be of great importance in the case of the early medieval period in Pomerania including Wrześnica.

Most importantly, though, is the fact that religious valorisation clearly demarcates the *sacrum* and *profanum* in spatial terms (Niczyporuk 1998). This work therefore looks at the specific arrangements that relate to areas identifiable by their potential for "inner mysteries" and ritual symbolism in contrast to the "uninitiated" spaces representative of everyday life. However, the emphasis is on avoiding a singular preoccupation with each site based on the separation into religious and secular locales since the goal is to holistically investigate and interpret the specific interrelationship of the *sacrum* and *profanum* for the entire cultural landscape of the Wrześnica micro-region.

4. The Wrześnica case study

Hall (1966), when researching the individual and communal spaces for various cultures, pointed to the existence of many different forms of space based on the diverse means of sensory perception (i.e., sight, sound, smell, taste and touch). With regard to the early medieval site at Wrześnica, perceptual recognition through sight provides a new set of information pertaining to the overall role for this stronghold. Based on the intriguing nature of immediate as well as distant visual spaces this important archaeological site was deemed ideal for a detailed GIS viewshed investigation. The specific approach incorporates arguments that, beyond current interpretations (Rączkowski 1999), suggest Wrześnica was not only a centre of social organization but also fulfilled an additional and highly symbolic purpose due to its prominence as a spatial focal point within the surrounding cultural landscape.

To achieve this goal the above notions with regard to the role and function of space have to form the basis for the Wrześnica case study while the main concern is with visibility or visual spaces. Clearly, humans not only identify the physical nature or structural components for a specific setting, but also establish and perceive the symbolism of a place as part of overall cultural developments. However, the perception of space is not just the consequence of what can be seen but also relates to things hidden from us either physically or conceptually because the cultural significance of a particular place may not be recognized (Hall 1966:28). Within this context, the question relates to what medieval peoples could or could not have "seen" and the effect that this might have had on the symbolic definition or appropriation of the landscape and its contents.

4.1. The setting

The general area under investigation is situated on the Sławno uplands, adjacent to the Słupsk uplands of middle Pomerania

(Pomorze), and comprises the broader geographic area of the southern Baltic seaboard of northern Poland. The Wrześnica micro-region is approximately 35 km^2 where many sites have been recorded including, in addition to the aforementioned stronghold, several settlements and burial mound cemeteries. For this study, all the available archaeological research data was consulted beginning with excavation and field survey results from 1982 onwards and, to-date, the corpus of the collected information is based on the culture histories and environmental records for the early middle ages (Rączkowski 1998).

According to the literature, the culture that occupied the site during the early middle ages would have belonged to the group of Pomeranian tribes comprised of the north-western Slavs (Leciejewicz 1989:58). Current research suggests that the Wrześnica micro-region was used by just one of the tribal units (Sułowski 1960) that settled in the basins of the central and lower runs of the Wieprza, Łupawa and Łeba rivers. These peoples are commonly identified as the Słowińcy based on the nomenclature of Wulfstan (Wenden) (Łosiński 1982).

Important archaeological remains obviously pertain to the site of Wrześnica located within the floodplain of the Wieprza river valley and they have been dated to the ninth to tenth century AD. The maximal height of its embankments or ramparts is approximately three meters from the interior surface and four meters above the current water level of the river. It is a "valley ring" type stronghold (Olczak and Siuchniński 1976) and kidney-shaped with a concave open space that encompasses a total area of approximately 0.6 hectares. It therefore puts the Wrześnica site into the category of average-sized strongholds ranging from 0.5 to 1.0 hectares.

4.2. Viewsheds

A GIS viewshed analysis was selected in an attempt to study and evaluate visual spaces and their potential symbolism with regard to the wider cultural landscape of Wrześnica. The overall goal was the interpretation of cultural phenomena by virtue of a spatial visibility/intervisibility context beyond the information available through limited culture and period-specific distribution maps. In other words, the application of this GIS tool should allow an examination of the archaeological data from a different perspective and through this process provide potentially new insights regarding life during the early middle age. As a standard viewshed application, there are limitations inherent with this tool particularly when used for archaeological research (Gillings and Wheatley 2000). It is therefore our belief that any such shortcomings should be explicitly mentioned as part of a study.

For one, the visibility maps that were created use a centrally situated viewpoint for each of the sites selected. Clearly, this approach disregards actual areal extents and thereby limits the capacity to generate viewshed results representative of an entire location. However, it has to be stressed that the issue of what constitutes a site is generally based on interpretation or specific archaeological practices and as a result concrete boundaries may vary considerably. With regard to the Wrześnica region the settlements and cemeteries in particular have been subject to different conceptual spatial definitions and it was deemed safer to select single viewpoints as a respective centre for each site.

In addition, the overt emphasis on the topographical layout of the Wrześnica micro-region obviously ignores other important environmental data such as vegetation. The problem of viewshed analyses applying barren landscape approaches that omit tree coverage has already been identified specifically (Tschan et al. in press). However, some understanding of early medieval culture together with present-day ecological circumstance does allow for further relevant information to be incorporated within the final interpretation. This study identifies an agrarian society that predominantly cultivated the western banks of the Wieprz river valley. The fact that the eastern sides of the valley are composed of old growth forest may therefore remedy to some degree the absence of other data for the generated results.

There is furthermore a general difficulty in reconstructing accurately the characteristics of significant archaeological structures (i.e., building dimensions, heights of barrows, etc.). And, it should be mentioned that the viewsheds produced depend on surface data. In other words, no raised elevations based on man-made structures were involved aside from the most probable maximal vertical extents of the Wrześnica stronghold ramparts set at a total of five meters. The next step involved the issue of a viewer's height and it was decided to add a realistic, albeit assumed, 1.75 meters above ground for each site. The visibility maps also use a value of 8.6 kilometers to define the field of view and this figure was derived from the maximum distance diagonally across the total study area (5x7 km).

In all of this, the inherent assumption is that the physical shape of the landscape around Wrześnica has not changed to a point where it is now solely indicative of current circumstances, while bearing no relationship to past characteristics. From preliminary geomorphological investigations, it is clear that the overall profile for this area has not altered to the extent that modifications to the dataset would be required.

4.3. Analysis

The actual computer tools included AutoCad to digitise the data available from 1:10,000 scale maps and the Idrisi GIS package to process the captured digital information. The basic spatial data consists of archaeological sites and contour lines with intervals of 1.25 meters. The final scale in Idrisi employs an individual raster cell size that represents a ten square-meter section of the real world. From the topographical information a digital elevation model (DEM) was created and, based on the specific site data, individual viewsheds were generated using the dedicated routine available in Idrisi.

The results concerning the archaeological content were then visually and statistically analysed in order to establish the number of sites that can be seen from each selected location respectively. At the same time, this work does not address any climatic conditions (e.g., precipitation, fog, variable lighting, etc.) that actually would have a dramatic impact on visibility especially with regard to distant background areas. We therefore accept that for our purposes the capacity for human sight concerning early medieval peoples at Wrześnica has been modelled in a relatively idealized fashion.

In order to examine the visual spaces and in particular the detailed intervisibility relationships, a total of 19 viewshed maps were generated. The archaeological data included five burial mound cemeteries, fourteen settlement sites (figure 2) as well as the stronghold of Wrześnica itself and the results for each were subsequently compiled (table 2). From this tabular arrangement
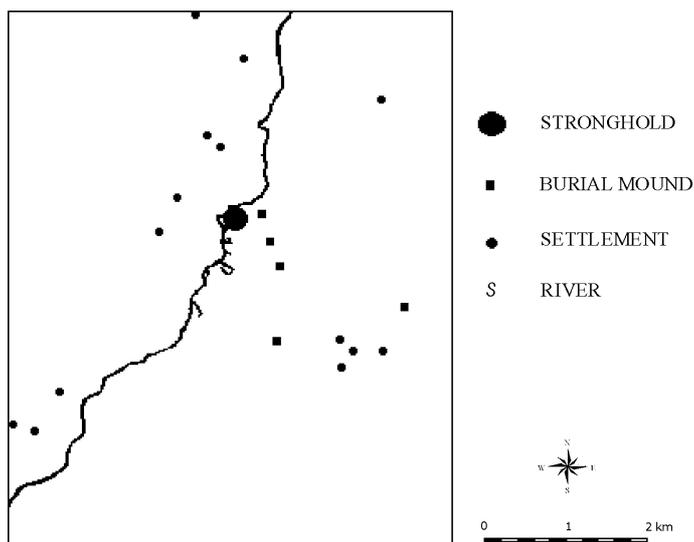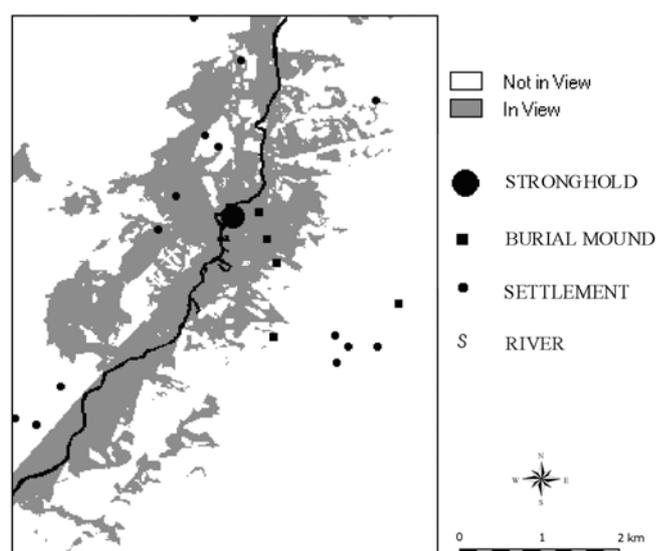
Figure 2: Sites in the Września region.

Figure 3: "Viewshed map" of the Września stronghold.

	Burial Mounds							Settlements											
Sites	S	49	50	57	58	59	4	5	7	10	12	15	25	30	38	46	52	54	55	60
S		X	X	X				X	X	X	X	X		X						
49	X							X		X	X	X	X	X	X					
50	X				X			X	X	X	X	X	X	X	X	X	X	X		X
57	X	X				X		X		X	X		X	X						
58																X	X	X		
59	X			X				X	X	X	X		X	X						X
4		X						X									X			
5	X	X	X	X					X		X									
7	X		X	X		X	X			X	X	X	X				X			
10	X	X	X	X		X					X	X		X						
12		X	X	X		X	X	X				X		X						
15		X	X	X				X	X	X										
25		X	X	X		X		X							X		X			X
30	X	X	X	X				X	X	X	X									
38		X								X			X	X			X			X
46					X	X											X	X	X	
52			X		X				X				X					X	X	
54			X		X												X		X	
55																X	X	X		
60		X	X			X							X		X		X			

Table 2: Site Visibility. S = Stronghold, X = visible, = not visible.

and the actual maps, it rapidly becomes clear that the stronghold incorporates the largest visible areas including the regions mainly to the east and west in addition to a substantial portion to the south of Września along the Wieprz river valley (figure 3). The cemeteries seem to have a similar visual preference as the stronghold inasmuch as the western parts and also much of the southern river valley are in clear view. In contrast, settlements seem to have no explicit visible association with specific areas and/or other sites. Thus, based on this preliminary assessment, the conclusions drawn would support the idea that the stronghold of Września from which the greatest number of settlements and burial mounds can be seen plays an important symbolic and unifying role as part of the wider cultural landscape.

5. An interpretation of Września

The preliminary interpretation of the results for this ongoing study is based on the preferred concepts of space outlined above. Clearly,

the stronghold appears to be the singularly most unique feature of this cultural landscape because it allows a superior view throughout the region. This also means that it is possible to examine its role not just as a dominant place in terms of central physical and visual prominence, but also with regard to the meaning that the people of Września would have bestowed upon it.

The fact that Września represents such a significant vantage point within the landscape means that people coming along the river valley clearly saw the site from afar. Similarly, anyone residing within the stronghold would have been able to recognize human movement throughout the surrounding landscape even at great distances. This extensive capacity for visibility may have been a necessary means of security since trouble could have been recognized at an early stage and it would have formed part of the physical preparations and refuge mindset required in defending the stronghold. In principle it therefore fulfilled a practical and symbolic separation from the world "outside". As an advantage spe-

cific to the stronghold's inhabitants the same would not have been available for everybody else living in the settlements.

Another main idea is that the stronghold seems to connect places such as settlements and cemeteries as part of a wider social and symbolic structure. This is particularly evident when considering that the symbolic burial grounds lie outside of the visual range for the inhabitants living in the settlements on the western side of the river valley. Thus, people would not have had the opportunity to directly observe the ritual burial mounds on the eastern side of the river valley but would have been able to do so from the stronghold. The stronghold might therefore have acted as a specific intermediary to commune between these two areas through its role as a visual go-between.

In other words, the symbolism relates to the bridging of worlds on either side of the river, involving the world of the living and the one of the dead. This link might also be extended inasmuch as the stronghold could have acted as a gateway from one world to the next based on a religious definition of the human life cycle and the specific ritual practices associated with it. This connection allowed the symbolic crossing of boundaries while in reality these would not have been bridged until death and internment in one of the cemeteries had actually occurred.

Based on the location of the stronghold the suggestion is that physical access to the afterlife was restricted while at the same time it allowed for a visual participation. Thus, it provides the means to be present in both worlds simultaneously. The question of whether or not this was the sole privilege of the inhabitants of the stronghold may, therefore, also reflect potential economic role divisions as well as socio-political structures with regard to the different cultural spaces for Wrześnica and its surroundings. Clearly, continued research is required that specifically investigates these and other space-related issues in order to extend upon these early results obtained from this viewshed analysis.

6. Conclusions

The initial assessment of this work provided the opportunity to combine post-processual landscape ideas with a GIS-based viewshed analysis. In effect, it has created the essential preconditions for what will ultimately be a holistic interpretation of the entire Wrześnica region, where different spaces are not just identified by their physical and functional properties.

"Seeing" specific places continually stirs the memories of people as part of the recognition of space and these spaces in turn form the permanent memory of its inhabitants. The available results of this study are therefore very encouraging, considering that the stronghold's role within the wider cultural landscape clearly involves visual spaces that were full of a meaning known to and transformed by the people that lived at Wrześnica during the early medieval period. We therefore suggest that Wrześnica was not only a place of habitation or shelter but, moreover, fulfilled an important role with regard to socio-cultural and magical-religious creation and use of space.

Acknowledgements

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