

# Digital Spaces in “Popular” Culture Ontologized

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## Abstract.

Electronic publication seems to have the biased connotation of a one-way delivery system from the source to the masses. It originates within the “Push culture.” Specifically, it triggers the notion of (a small number of) producers and the (masses of) consumers. The World Wide Web (but not the Internet) tends to reinforce this intrinsic paradigm, one that is not very different from schooling. Wikipedia, in all its linguistic varieties is a classical publication of the collective. Much enthusiasm is expressed for the English version. The rest of the other world languages do not fare so well. It is of interest to consider the nature and status of Wikipedia with respect to two specific fields, Mathematics (which is not so popular) and Soap Operas (popular for the masses, largely sponsored by the Corporations).

**Keywords:** Digital Space, Intelligent Artificial Life, Ontology, Soap Opera

## 1. The Talking Drum

“Before long, there were people for whom the path of communications technology had leapt directly from the talking drum to the mobile phone, skipping over the intermediate stages” [1][2]

It comes as a shock for most, to know that the first successful transmission of message data (i.e., significant amount of meaningful information, in the technical scientific sense) at a distance, was done on African drums? From the book cited above one may, with clear conscience, jump to Wikipedia to see if there is information on the “Talking drum” [1, 3].

The previous sentence structure is carefully crafted for those who believe that the printed book has priority/superiority over a distributed elusive-multi-author, multi-linguistic electronic resource. On the other hand we will look at the potential problem of the multitudinous electronic resources that offer a cornucopia of Information in most natural languages of the entire world. To explore this hypothesis we will focus on two cultural items: a) Mathematics, a topic for the few, significant for all, and b) Soap Operas, a topic for the many, interesting for most.

What is known? What can be known in the Digital Culture of our times? The visual seems to dominate and appears more accessible to us in 2012 than either the word or the speech? By visual one means, the film, the TV programme, the picture,

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the poster, in other words that thing towards which the eyes are immediately drawn. In certain cultures and at certain times, certain kinds of images have been strictly forbidden [4].

Like it or not, Wikipedia, is an enormous resource for both Mathematics and Soap Operas. It is frequently the case that a Wikipedia topic is presented in more than one natural language. In general, a topic in the English Wikipedia has correspondents in other language versions. On the other hand, there are topics in non-English Wikipedias that have no correspondents in English. Consequently, it is of importance to note that Google Translate can give a reasonably good sense of the content of a Wikipedia page written in language L (with translation into M).

Now is a good time to introduce our naming convention for different language versions of Wikipedia. For the big English Wikipedia one might obviously write WP. But there are many language versions that would have the same abbreviation. Hence one further suggests the use of the international forms “en” and so on to distinguish between distinct language versions. For example, to denote the English and Portuguese versions one might write enWP and ptWP, respectively. For Cyrillic, and especially for the Bulgarian Wikipedia, one proposes the use of bgVII, preserving the current English prefix, but respecting the Cyrillic abbreviation.

Later on one will have a similar naming problem to resolve for actors and the roles that they play in particular Soap Operas. Again, the natural language versions need to be multi-faceted, if only to be harmonized with respect to the usual sorts of accounts given in the various linguistic versions of Wikipedia.

Similarly, is one not also aware of the apparent dominance of music within the general realm of sound. Might there not be a good reason for an aural uprising against the “digital sound”? [5]. On a speculative note one recalls the significance of the digital musical sounds for communication in “Close encounters of the Third Kind” [6].

Wikipedia has a very high profile in the English-speaking world. Access to a particular page in enWP ([en] may be omitted on the understanding that, by default, one is accessing the English version of WP), on a specific date, may be registered in the standard ISO format [yyyy-mm-dd]. For example, let us now turn to enWP[2012-01-09] to see what kinds of interpretations are currently given to “digital shape”. Naturally, one will compare search results with the more primitive “shape”.

There are Wikipedia competitors of all sorts in 2012. For example, a search on the phrase “Criticism of Wikipedia” will bring up many interesting WebSites, of which Knol [7] is a special one, now terminated [8].

The phrase “digital shapes” conjures up, in the first instance perhaps, geometrical digital shapes? In other words, in this context the digital shape is not amorphous. It has a certain familiarity. If we imagine, a triangle, a square, a rectangle, a circle, we

conjure up in our minds the corresponding familiar shape. To speak of the Pentagon, with deliberate capitalization, recalls the shape of that building of the same name in Arlington County, Virginia, near Washington D.C., and separated from same by the Potomac river. Such specifically geometrical shapes lie at the very foundation of all civilizations and the artefacts that arose therefrom.

## 2. Mathematics

Whether one likes it or not, Mathematics is a core cultural phenomenon in humanity. To ontologize Mathematical material is, in a deep sense, easy! I mean to say, to mathematize is, de facto, to ontologize reality. Let me tell you about the Masters Course that I teach?

Students taking the MSc course in Interactive Entertainment Technology (MSc IET), in Trinity College Dublin, are currently required, not only to use Wikipedia to ascertain relevant mathematical information, but also to register formally as editors of Wikipedia, the better to understand something of the process of maintaining a specific body of digital knowledge. In addition to Wikipedia, the students are also required to use Wolfram Alpha. Scholarpedia [9, 10] is on a different “higher academic” level. It is not considered to be a primary electronic mathematical resource for the MSc IET course. It does have its uses and students are recommended to use it for certain topics.

Examination of the subject is “open book.” The students use Mathematica and Wolfram Alpha for all their practical work. The examination paper is currently delivered in classical paper format, in order to comply with the University of Dublin Regulations. In practice, the paper is an electronic publication (typeset with LaTeX [11]) and printed on paper to conform with current regulations. The solutions to the examination paper are developed in electronic form (specifically as Mathematica notebooks). Such solutions are reprocessed in pdf form for electronic transmission to the external examiner (currently elsewhere in the EU). The students answer the questions with the use of the Mathematica notebook form. The notebook is then e-mailed to the examiner, and in addition, copied to a USB stick as backup.

en (3,787,457) (3,840,318)	bg (122 840) (125 409)	pt (703 219) (709 567)	fr (1 168 548) (1 195 043)	de (1.307.907) (1,339,416)
Square (geometry)	<b>Квадрат</b>	<b>Quadrado</b>	<b>Carré</b>	Quadrat (Geometrie)
Laplace transform	Трансформация на Лаплас	Transformada de Laplace	Transformée de Laplace	Laplace transform
<b>z-transform</b>	<b>Z- преобразование</b>	<b>Transformada Z</b>	Transformée en Z	<b>Z- Transformation</b>

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Cellular automaton	ru Клеточный автомат		Automate cellulaire	Zellulärer Automat
Spline (mathematics)	ru Сплайн	<b>Spline</b>	<b>Spline</b>	<b>Spline</b>

**Table 1. Some MSc IET mathematical topics of the first semester**

Consider some of the specific mathematical topics taught in the first semester (September-December 2011): Laplace Transform, z-transform, cellular automaton, and splines. The students often have a second or third language. Hence, for each topic they are encouraged to look up another language equivalent. A very brief summary of the sort of work done is illustrated in Table 1. The header row gives the language. The first row illustrates a Wikipedia lookup for a simple mathematical concept, the square. The subsequent rows illustrate four of the key mathematical concepts used in the first semester.

NOTES on MSc IET mathematical topics of Table 1:

1. In the original research, one looked at the Irish language website, ga (13,478), with a view to ascertaining its suitability for "Higher Level Mathematics." The results were so appalling that the data has been deliberately omitted. One may conclude, that in the matter of Science and Mathematics, the Irish language culture is apparently in significant decline, from the point of view of the Digital Space. The interested reader will note that, with respect to Wikipedia, many world cultures are in a similar position.
2. In the second column one started with the Bulgarian Wikipedia (bg); the mathematics pages were too few, inadequate; one switches to the Russian Wikipedia (ru) for better comparison. There are roughly 7 times more ru pages than bg.
3. In the last column one started with the Irish Wikipedia (ga); the mathematical entries were practically non-existent. One might use the nature and amount of Mathematical pages in Wikipedia to judge the health of the corresponding culture.

Mathematics is one of the keystones of any culture. It is the foundation of any science, whatsoever. Not only is it pragmatic and aesthetic, but also practical and publishable. The nature of the (electronic) publication of Mathematics in our times is due to one man, Donald Knuth [12]. He it is who gave us TeX and MetaFont. In practice, today, one uses LaTeX [11] or, considering all the other languages on earth, the XeTeX of Jonathan Kew. Of particular importance, for the publication of Mathematics within Wikipedia, is the use by MediaWiki of a subset of AMS-LaTeX markup.

From the digital space point of view, one also needs to mention the use of online video clips of lectures, whether delivered via YouTube or on specific College sites such as MIT OpenCourseware [13].

### 3. Digital Space/Digital Shape

Now let us turn to what might seem to be an easy application of Wikipedia, with respect to these concept words?

**E75\_Conceptual\_Object\_Appellation:** Digital\_Space

**E75\_Conceptual\_Object\_Appellation:** Digital\_Shape

en	bg	pt	fr	de
Shape Start-Class				
Space C-Class	Пространство	Espaço físico	Espace (notion)	Raum (Physik)
Digital culture		Era da Informação	Société de la connaissance	Informationszeitalter

### 4. Digital story telling: Забранена любов (Forbidden love)

Let us consider the Soap Opera [14], (and related Telenovela [15, 16], a pulp-television show) in its digital form, abbreviated here as Digital Soap? It is a particular modern form of story telling, originally born in the age of radio (product placement of soap by Procter and Gamble [16]) and developed extensively in the age of television. In our times, the latter has migrated into the digital space. From the point of view of the Digital Space it is of considerable significance that one can still experience something of that original Soap Opera today. The soap product was OXYDOL [17] and one can still listen to the original broadcasts [18].

For definiteness we shall use a Bulgarian Soap, entitled “Забранена любов (Forbidden love)”, which is accessible on VBOX7 and formerly on YouTube. The Soap is originally based on an Australian Soap entitled “Sons and Daughters” [19]. We will need to distinguish between the actor and the role played. We will need to manage the names of the actor and role in both Bulgarian and English. We will want to show pictures of the actor and of the role played for this specific Soap. Such pictures might cause certain difficulties with respect to copyright. From a research point there is always “fair use”. One way in which to manage one’s research is to set up a private Flickr group where the picture may be viewed but cannot be reused. There is such a private Flickr group with the name “Забранена любов” [20]. Naturally, one will want to tag the pictures with appropriate information. A more formal approach can be taken with use of an

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ontology editor such as Protégé [21]. See, for example, “Keyimages ontologized for the Cultural Masses” [22].

A key question for us is to determine the boundary of the digital space of *Забранена любов*. For example, in addition to the above, there is a Croation version, “*Zabranjena ljubav*” [23]. A second key question is to determine to what extent it corresponds to similar Soaps currently available in the Island of Ireland and correspondingly to consider to what extent the latter might be “translated” to countries such as Bulgaria, Turkey, Portugal.

Soap	TV Host	Wikipedia	Star XX	Star XY
Забранена любов Forbidden love	NOVA	bg, en	Ева Захаријева Eva Zaharieva	Борис Костантинов Boris Konstantinov
EastEnders	BBC	cy, de, en, eu, fr, ga[x]		
Fair City	RTÉ	en, ga, pl	StarXX	StarXY
Neighbours	FremantleMedia	en+15	StarXX	StarXY
Ros na Run	TG4	en, cy, ga, eu	StarXX	StarXY
Emmerdale				
Coronation Street				
Cougar Town				
Doctors		—		
Стъклен дом Glass house	BTV	bg, en, hr	Елена Атанасова	Христо Атанасов

Table: NOTES on the Soap Operas

1. Star XX and Star XY [24] denote key female and male actors/roles; for example Ева Захаријева (Јана Маринова) и Борис Костантинов (Тодор Танчев). In particular, note that for passionate viewers of the Soap, the Soap person identity is the “real name” by which (s)he is known to the public. If the Soap runs long enough the actor's real name becomes irrelevant. In other words the actor and the part become one, the Soap name becoming the “real name” of the actor. This is a major “event” for the Ontology!

2. There does not appear to be a specific website for *Забранена любов* any longer. One deduces that a significant part of the Soap's Digital Space has been excised.

3. It is worth noting that there is a similar “corresponding soap,” entitled *Забраненият плод* [25] (Forbidden fruit, originally Turkish (Istanbul setting), and dubbed for Bulgaria.)

4. Other entries are deliberately blanked. The reader is invited to fill in appropriate details according to taste. In other words, the Semantic Field of Google + Wikipedia + WhateverOneWants is sufficient to find out most relevant information in most languages of the World, today!

5. The last entry in the table records another successful (and more polished) Bulgarian Soap opera. Its inclusion in the table is intended to provide for a little bit of fun for the reader. Specifically, one is invited to make the connection between “Forbidden love” and “Glass house.”

6. Other entries are deliberately blanked. The reader is invited to fill in appropriate details according to taste.

#### 4. Everyman as publisher

Schooling is one way in which to force a person (qua student) to confront the possibility of making public their thoughts (originally orally). Such initial self-expression has many possible outlets: teaching, acting, and so on. After the oral there comes the writing, the author. Now in our Digital Age, there are multi-media in which one can express oneself, to show and tell. The audience for such media is virtual (and maybe non-existent). It is the story which is the thing. That story may unfold orally, in writing, in clay, in paint, or in our times, digitally. The mathematical shape of the parabola, may manifest itself as a sketch or as stone bridge. What might be the electronic equivalent? What sort of tools does one need?

The research goal for 2012 now becomes very specific. It is to assemble a collection of digital devices (such as phone and tablet), a collection of digital spaces (such as music, video, and still image), a collection of knowledge sources (Wikipedia, Books, Articles) and then to construct and demonstrate a new kind of Dynamic, a Digital Shape in the field of Electronic Publication. It is nothing more than the manifestation of a story (in the classical sense), determined by Digital Means. In particular, this research intends to reverse the action, from passive story feed via TV to active **deconstruction** via the person and her/his digital artefacts. There is a phrase for such activity, remix culture [26]. In his book~RemixEconomy Lawrence Lessig cites the now classic case of a mother posting a YouTube video clip (29 seconds) of her baby boy dancing to some background music, of someone called “Prince”.

Let us begin and end with the Soap opera? Let us tear it apart? The key to deconstruction is to capture stills from the dynamic video. This requires bookmarking or tagging of video frames. Given a character, can one re-identify

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the same character in a different setting? Is this sequence just like Romeo and Juliet? Perhaps that one is pure Macbeth? How can I show and tell you what I have seen, discovered, deconstructed? How can I ePublish it? For whom?

### 5. Conclusions and Suggestions

If a Soap Opera runs on, and on, and on, then the magic of the story tends to disappear and become banal. It takes on the characteristics of daily life, albeit in another form. The Electronic Publications of 2012, and beyond, must be of the same type, short enough to be interesting, to tell a story. Wikipedia captures much of the nature of the kernel this kind of story. There is text, there are images, there might be some video links. There is background explanation of how the story came to be. This paper suggests how one might take this one step further, with the use of a collection of personal electronic devices to remix and publish at will.

### 6. Acknowledgements

The recently published book, "From Gutenberg to Zuckerberg, What you really need to know about the Internet" by John Naughton 2012, arrived in time to help me re-think the course of Ontological History! Of particular interest was his short section on Wikipedia, p.88-96, which confirms the nature of Electronic Publication, in general, and happily correlates with the thesis formulated in this paper: the reader as activist writer, correlator, publisher, in short, Everyman.

### Acknowledgements

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