Cyber Anthropology or Anthropology in Cyberspace

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A B S T R A C T

As a variety of anthropology, cyber anthropology is considered to be the fastest growing sub branch in the science. It is based on synergic effects of multimedia systems and hypermedia, using their comparative advantages. One of the least researched fields of cyber anthropology is the relationship of individuals and social groups with a multimedia document in terms of their perception of such subject. This is because the foundation of social-informatics perception in the society is created based on the evidence of a real life, whereas here the perception is established at the level of virtual, i.e. online life. The rhetorical question here is whether an identical content causes the same or different user reactions, depending on whether it was perceived offline or online, i.e. to what extend does the medium (and not the information content) dictate the user perception. In this respect the research titled »Perception of online museum content creators and actual habits of Croatian online museum visitors« can be a »case study« for the impact of »cyber potential« on the classic anthropological paradigm.

***Key words:** cyber anthropology, visual anthropology, anthropology, perception, content presentation, museology, Internet, online, offline, online museums, virtual museums, Internauts*

Anthropology and Development of New Information Communication Technologies

When it comes to new information communication technologies, social development simultaneously imposes the development of new scientific fields. In this context the development of cyber anthropology, a sub branch of anthropology that detects and analyses behaviour of both broad social community and the individual in the online environment, represents the natural and logical course of development of this scientific field.

The aegis of the academician Pavao Rudan[1] advocating the holistic-analytical approach, which in the seventies he has used as a guideline for the development strategy of the anthropology in Croatia, proved to be correct and encouraging in terms of broader scientific environment, resulting in the development of many varieties of anthropological ideas, including the cyber anthropology in Croatia.

The reason for emergence of »cyber anthropology« is rather clear; the existing rules, processes and procedures of observing, research and analysis as we knew it in the former anthropological »offline« world are by far not adjustable to nor adequate for the new anthropological »online« environment.

Specifically this means that the emergence of new media inevitably causes irrevocable formation of new habits and of the »cognitive ergonomics« of cyber space (i.e. Internet) users, which is apparent in a very practical and everyday way in the broadest spectrum of the behaviourist paradigm on all socio-cultural levels.

Considering the speed at which the new information communication technologies are spreading in the domain of everyday life, it can be expected that due to evolution very soon a series of behavioural-process canons will be formed that are yet to be explored and analysed by cyber anthropology. The fact is that parallel social universes are formed on the Internet, with rules of communication, perception and interaction that represent a huge challenge in terms of research.

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ence. It is based on synergic effects of multimedia systems and hypermedia, using their comparative advantages.

As a new medium Internet brings along the opportunities for the use of audiovisual methods that make the visual registration of the state on site and the subsequent post production and analytic of such materials significantly easier with the improvement of new communication and information tools. The main technological features of the new medium – hypermediality and multimediality – offer a range of possibilities for evaluation of holistic approach to anthropological concepts, thus reflecting the anthropological holistic paradigm in terms of technology.

Hypermediality enables the researcher to manage the information in a non-linear manner in the context of investigating the visual anthropology domain to such a degree that in the development of this profession a point will soon be reached when the researcher's presence on the spot will not be imperative any more.

One of the most unexplored fields of cyber anthropology is the relationship of individuals and social groups with a multimedia document in terms of their perception of such subject. This is because the foundation of social-informatics perception in the society is created based on the evidence of a real life, whereas here the perception is established at the level of virtual, i.e. online life. The rhetorical question here is whether an identical content causes the same or different user reactions, depending on whether it was perceived offline or online, i.e. to what extend does the medium (and not the information content) dictate the user perception.

In this respect the research titled »Perception of online museum content creators and actual habits of Croatian online museum visitors« has been used as a »case study« for the impact of »cyber potential« on the classic anthropological paradigm

In 2006 this research was an integral part of the author's doctoral dissertation[2] titled »Models of presentation and evaluation of content of online museums in Croatia« as well as of the book[3] »Anthropological paradigm of communication aspects of presentation, perception and evaluation of online museum contents« published in 2011.

Methodology of Online Content Perception Research

The goal of the research was to find the answer to the question whether the perception of Croatian museum experts and multimedia professionals gathered in the project »Croatian Virtual Museums« (hereinafter: CVM), which brings together all Croatian online museums through multimedia, was concerted with actual habits of the visitors of Croatian online museums.

The basic idea of the research re-examined the »*differentia specifica*« of online museum perception between the three key groups:

a) Creators of CVM multimedia content of (the company for development of multimedia applications »Novena«)

b) Professionals (museum experts, curators)

c) Users (audience, i.e. Internet visitors).

The creators of Croatian online museums in the CVM[5] project, which integrates all Croatian online museums, certainly had a specific vision of what could appeal to visitors and attract them to such online contents. In this context it will be interesting to see to what extend their general and specific perception of the new medium's potential differs from the objectively analysed perception, i.e. surfing habits of online visitors of such museums.

The assumed perception that Internauts (Internet users) have of online museums – as perceived by museum professionals (museum experts, curators) and by online museum creators (the company for development of multimedia applications »Novena«) has been analysed by the poll method, whilst the realistic data on the actual interest of Internauts were obtained by the method of web log analysis.

Specifically, when browsing multimedia contents online, each Internaut leaves »tracks«, which are very accurately recorded on local servers. By analysing these »tracks«, the so-called »web-logs«, we can generate a realistic representation i.e. flow chart of actual movement of the users in the online environment.

The comparative analysis of results of the first two groups (poll) with the results of online users (»web-logs«) provides valuable information on the concert of their perception.

The results of subsequent statistical analysis will help in finding the optimal model for future multimedia creation of Croatian museums on the Web. Such new model would be based on content selection and online presentation of museum holdings according to the criterion of target population – Internet visitors (and not the criterion of offline assumptions of the profession and of technical creators of such content).

In addition, a very important effect of having the results of such analysis is the optimisation and (re)positioning of »online museums« in the perception of broader community as independent and distinct culturological »entities« with own funding.

The basic scientific hypotheses of the research was established as follows: The respondents' offline perception is a polar opposite of the actual (online) perception and habits of online museum visitors according to criteria of number of visits, way of coming to online museum sites, frequency of visits and time of visits.

The basic Hypotheses (H_1) that the perception of creators of museum content on the web are different from the actual access of users to the sites containing virtual museums is supported by:

– Lack of connection (or negative correlation) between the respondent's rank and actual rank of

most important key words that lead the users to on-line museums;

– Misperception of the number of countries from which the respondents access online museums;

– Misperception of the time of day when the visitors prefer to visit Croatian online museums;

– Misperception of the frequency of visits on week-days and on weekends;

– Misperception of the monthly and daily attendance rate in online museums.

To test the affirmative hypothesis (H_1), for each question a zero hypothesis (H_0) will be formed, assuming that there are no differences between the assessment of the creators of Croatian online museums contents and the actual habits of Internauts as recorded in »web-logs«.

Key Concepts Leading the Visitors to Online Museums

The respondents were asked to rank 12 terms that the visitors of Croatian online museums have entered into search engines, which have then lead them to CVM sites. The terms chosen from »web-log« statistics had various frequencies of use for reaching the mentioned site.

The respondents were instructed to rank the terms so that rank 1 was assigned to the term that in their opinion was most frequently entered into search engine and rank 12 was assigned to the term that they assumed has in least cases lead the user to Croatian online museums.

The concepts were ranked in »web-logs« in the same way. For graphical representation (Figure 1) the inverse rank measure was applied (frequency=13-rank), so that the higher column represents the more frequently used term.

From all respondents the average ranking for each respective term was calculated and the result was the as-
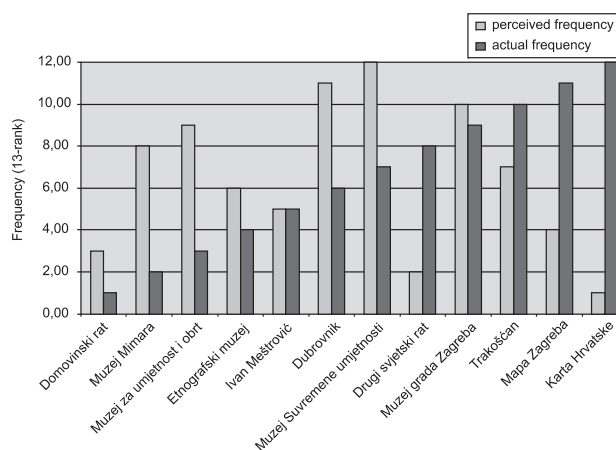

Fig. 1. Perceived and actual frequency of concepts leading the visitors to the »Croatian Museums online« sites http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, frequency being defined as inverse rang value: frequency=13-rank.

sessed frequency of use for individual terms. Additionally, the average ranking for each of the terms from »web-logs« over the 5-months period needed to be calculated, in order to include the period of research and to obtain a more stable measure that was independent of accidental variations in individual months (Table 1).

The hypothesis H_1 would be verified if the average ranking assigned to terms by respondents would not correspond to the average rank of frequency of such word as a search string in the »web-log« statistics.

In this respect there are two possible scenarios:

1. the ranks do not coincide

or

2. the ranks provided by respondents are diametrically opposite to the ranks obtained from »web-logs« statistics (e.g. the respondents ranked a

TABLE 1

ACTUAL AND PERCEIVED FREQUENCY OF KEY CONCEPTS (WHAT DO THE VISITORS MOST FREQUENTLY ENTER INTO SEARCH ENGINES TO REACH THE SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/)

»Search string« or what do the visitors most frequently enter into search engines	January	February	March	April	May	Average rank: »web logs«	Rank Web	Average rank obtained from respondents	Rank respon-dents
Mimara Museum	9	10	10	11	10	10.00	11	5.04	5
Ethnographic Museum	8	9	9	9	10	9.00	9	6.05	7
Modern Art Museum	6	6	7	7	9	7.00	6	4.20	1
Zagreb City Museum	3	4	4	4	3	3.60	4	4.59	3
Dubrovnik	7	7	6	8	8	7.20	7	4.50	2
World War II	5	2	5	5	5	4.40	5	9.65	11
Map of Zagreba	2	3	2	3	4	2.80	2	8.39	9
Croatian War of Independence	11	10	10	11	10	10.40	12	9.15	10
Map of Croatia	1	1	1	1	1	1.00	1	9.96	12
Trakošćan	4	5	3	2	2	3.20	3	5.20	6
Museum of Arts and Crafts	11	10	10	10	7	9.60	10	4.69	4
Ivan Meštrović	10	8	8	6	6	7.60	8	6.61	8

term with the average rank 1, and the same term has average rank 12 in the »web-logs« statistics).

In the former case, we expect zero correlation that is statistically insignificant, whereas in the former case (which supports the second hypothesis in a more direct way) we expect a negative and statistically relevant correlation between the ranking provided by respondents and the »actual ranks«. The hypothesis H_1 would only be rebutted in case that the result is a positive and statistically relevant correlation between the ranking provided by respondents and the »actual ranks«.

On the results in the columns »Average rank: web logs« and »Average rank obtained from respondents« Pearson's correlation coefficient was computed, indicating a comparatively low, negative, statistically irrelevant correlation ($r=-0.35$; $p>0.05$). Pearson's coefficient has been used to retain in the analysis the details provided by average ranks computed to two decimal places.

On the actual ranks, in columns »Rank Web« and »Rank respondents« Spearman's rank correlation coefficient was computed, also indicating a comparatively low, negative, statistically irrelevant correlation ($ń=-0.21$; $p>0.05$). Both analyses show that the ranks provided by respondents do not coincide with the ranks obtained from »web-logs« statistics.

The negative sign suggests that the respondents have often assigned lower rank to terms that in reality ranked higher, and they also assigned higher rank to terms that in reality ranked lower.

However, one should be cautious when deriving and generalizing such conclusions, because the derived coefficients are near zero value and are not statistically relevant (this means that in some cases the rank obtained from respondents and from »web-logs« have tallied).

Some differences between correlations were observed when the results were classified per gender and place of employment. It turned out that men had a more distorted perception of the frequency of individual terms leading the visitors to the sites of online museums ($r_m=-0.48$; $p>0.05$) than women ($r_ż=-0.25$; $p>0.05$). Also, it was shown that in that department the perception of museum employees was more distorted ($r_{muz}=-0.37$; $p>0.05$) than the perception of the employees of the company NOVENA ($r_n=-0.06$; $p>0.05$).

The above results indicate that the creators of online museum content do not have a correct conception of key words leading the respondents to online museum, and thus indirectly also of marketing or other potential of such key words.

Frequency of Visits

Frequency of visits from various countries

The respondents in the poll were answering the following question: »From how many countries in the world does the site http://www.mdc.hr/hr/muzeji-u-hrvatskoj/ hvm-pregled-muzeja/ have visits (What is the number of countries from which the visitors »click« this address)?« Basic descriptive analysis of their answers is shown in Table and Figure 2.

To compare the average respondent's answer with the results from CVM site's »web-log«, we computed the average number of countries from which these sites were accessed from January to May of the current research year.

The hypothesis would be supported by a statistically relevant difference between the respondents' answers (in terms of the average poll result) and the average

TABLE 2
FROM HOW MANY COUNTRIES IN THE WORLD ARE VISITORS ACCESSING »CROATIAN MUSEUMS ONLINE«
http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/

Number of countries	Frequency	%	Cumulative %
100	2	2.7	2.7
50	20	27.0	29.7
25	31	41.9	71.6
10	13	17.6	89.2
5	8	10.8	100.0
Total	74	100.0	
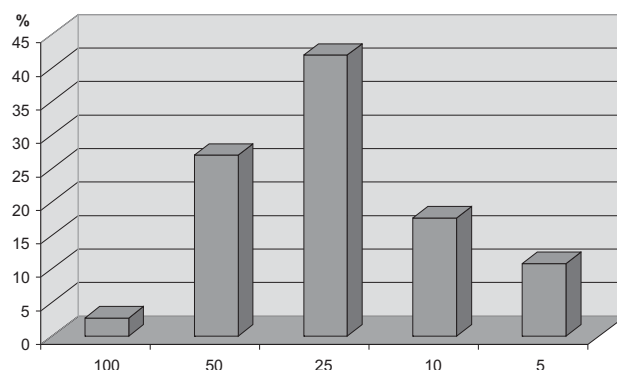
Fig. 2. From how many countries are visitors accessing web sites »Croatian Museums Online« http://www. mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/.

TABLE 3
THE AVERAGE NUMBER OF COUNTRIES FROM WHICH THE WEB SITES CROATIAN MUSEUMS ONLINE
http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/ ARE ACCESSED, ACCORDING TO »WEB – LOG« STATISTICS

Jan.1st to May 31st (measured by web – log analysis)	January	February	March	April	May	Average for all months (»web-logs«)	Average answer of respondents (poll)
Average number of countries	91	90	93	100	96	94.00	28.99

TABLE 4

AVERAGE RATE OF VISITS ON WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/
PER TIME OF DAY

	January	February	March	April	May	Average	%
20.00 h – 00.00 h	1216.75	1080.50	1207.75	868.25	1093.50	1093.35	12.67
16.00 h – 20.00 h	1754.50	1984.25	1899.50	2187.00	2226.25	2010.30	23.29
12.00 h – 16.00 h	2007.00	2231.00	2207.50	2127.25	2296.50	2173.85	25.19
08.00 h – 12.00 h	2028.00	2377.25	2409.00	2590.50	2677.25	2416.40	28.00
00.00 h – 08.00 h	801.37	834.12	904.62	1073.62	1065.87	935.925	10.85

number of countries computed from the »web-log« statistics including the period of 6 months (Table 3).

In case that the difference were not statistically relevant, i.e. if it were so small that it could be assumed that it is a result of random variations, then we would have to dismiss the affirmative hypothesis and accept the zero-hypothesis, which would mean that the respondents have a correct conception of the number of countries from which the visitors access virtual museums.

For comparison of results we applied the t-test for the comparison of sample mean (poll results: M=28.99) and given constant (data from »web-log« statistics: 94.00).

The statistic analysis results showed that the respondents underestimated the number of countries from which the visitors access online museums to a statistically relevant degree (t=28.206; p<0.01).

This was the first, scientifically proven signal that the respondents' perception of users' web habits did not correspond to actual reactions of online visitors. Especially surprising was the fact that the difference between the obtained objective »web-logs« results and answers provided by multimedia content creators in the poll was comparatively big (Tables 2 and 3), (Figure 2). This leads to the conclusion that not even those creating multimedia documents are fully aware of new medium's full potential.

Frequency of visits according to time of day

The respondents in the poll were answering the following question: »At what time of day/night do the visitors prefer to visit Croatian online museums?«.

For the descriptive comparison of results provided by respondents and obtained from »web-log« statistics (testing of difference in values was not appropriate, as the phenomenon in question is a cyclic one) it was necessary to make several transformations on the results of web log statistics. First we computed the average rate of visits on sites over the five months' period, for each time of day specified in the poll. Then from the derived average values the percentage of visitation rate was computed for each respective time of day (Table 4).

These percentages were then compared to the percentages in Table 5 and shown in parallel on the radial diagram (Figure 3).

The tabular data (Tables 3 and 4) and the radial diagram (Figure 3) indicate that respondents' offline assumptions on peak visiting time depart from the real data obtained from »web-log« statistics.

While the respondents think that the most visitors come to online museums in the late afternoon and in the evening, »web-log« data indicate that most of online visits happen from 8.00 a.m. to 12.00 (noon) and only slightly less from 12.00 (noon) to 4.00 p.m.

The number of online visits further declines in the late afternoon, in the night and early in the morning. This shows that most of the visitors access online museums during or immediately after working hours and that such visits mostly are not done from home, at the lower rate for Internet access. This again is an indicator that
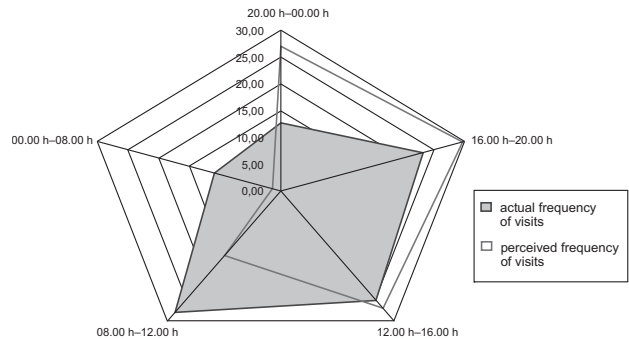
Fig. 3. Perceived and actual frequency of visits to web sites »Croatian Museums Online« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, per time of day.

TABLE 5

RESPONDENTS' ASSUMED PEAK VISITING TIME TO WEB SITES
»CROATIAN MUSEUMS ONLINE«
http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/

When do the visitors mostly visit online museums	Frequency	%	Cumulative %
20.00 h – 00.00 h	20	27.0	27.0
16.00 h – 20.00 h	22	29.7	56.8
12.00 h – 16.00 h	20	27.0	83.8
08.00 h – 12.00 h	11	14.9	98.6
00.00 h – 08.00 h	1	1.4	100.0
Total	74	100.0	

the perception of online contents is impacted by economic factors.

This discrepancy between offline perception of web site creators and the actual habits of visitors when it comes to access to online museums shows a lack of understanding of practices, rituals and habits of the target group of potential users of online museum services.

Frequency of visits on weekends and on weekdays

The respondents in the poll were answering the following question: »To what extent does weekend (Saturday, Sunday) impact the visits to CVM sites«. The answers provided by respondents are shown in Table 6 and Figure 3.

These answers can be only indirectly compared with the data obtained from »web-log« statistics. To make this comparison, first the »web-log« statistics data need to be checked to find out whether the relative visitation rate is higher on weekdays or on weekend. For this purpose the average visitation rate was computed per weekdays and per weekend over the period of five months. The results shown (Table 7) indicate that the average visitation rate on weekdays is almost double the average visitation rate on weekends.

If the respondents think that the visitation rate does not depend on whether it is a weekday or weekend, the frequency of all answers would be approximately the same or the answer »same as on other days in the week« would dominate.

The respondents' results will be compared to the zero-hypothesis (H_0), where all answers are equally frequent. The affirmative hypothesis (H_1) will only be confirmed if the results show statistically relevant departure from H_0, in terms of assumption that more visits occur on weekends, which is contrary to the results obtained from »web-log« statistics.

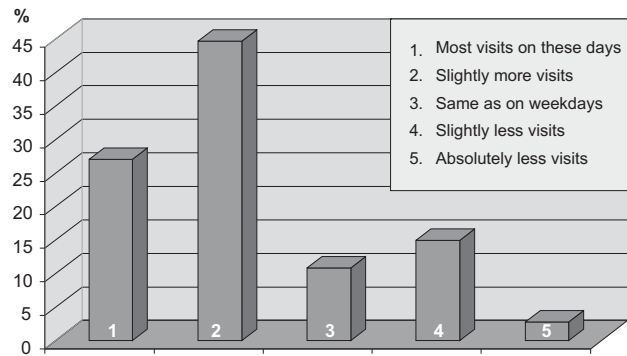

Fig. 4. *Frequency of visits to web sites »Croatian Museums On-line« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/ on weekends.*

The Hi^2 test was conducted on all answer categories comparing the answers with the assumption of equal frequency (Table 8). The result was a statistically relevant difference between the results and H_0, so H_0 could be dismissed. The largest positive departure of answers from the zero hypothesis was observed in the category »Slightly larger (more frequent) visit«, which represents the dominant respondents' answer from. Also, only a small number of respondents considered the weekend visitation rate to be »absolutely lower« than the visitation rate on workdays.

The result of conducted analyses supported a part of the basic scientific affirmative hypothesis, as the results show that respondents' offline perception really is diametrically opposite to actual habits of online museum visitors. The visits are more frequent during working hours and on workdays in the week and not in the eve-

TABLE 6
VISITS TO WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/ ON WEEKENDS

Visits on weekends	Frequency	%	Cumulative %
Most visits on these days	20	27.0	27.0
Slightly more visits	33	44.6	71.6
Same as on weekdays	8	10.8	82.4
Slightly less visits	11	14.9	97.3
Absolutely less visits	2	2.7	100.0
Total	74	100.0	

TABLE 8
FREQUENCY OF ACCESSING WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/ hvm-pregled-muzeja/, ON WEEKENDS AND ON WEEKDAYS

Visits on weekends

Response	Frequencies	Zero-hypothesis	Difference
Most visits on these days	20	14.8	5.2
Slightly more visits	33	14.8	18.2
Same as on weekdays	8	14.8	–6.8
Slightly less visits	11	14.8	–-3.8
Absolutely less visits	2	14.8	–-12.8

$\text{Hi}2=39.378; p<0.01$

TABLE 7
AVERAGE NUMBER OF ACCESSES TO WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, ON WEEKENDS AND ON WORKDAYS (DERIVED FROM »WEB - LOGS«)

	January	February	March	April	May	Average	%
Weekdays	39265.05	41540.95	42000.74	45758.29	46126.24	42938.25	60.77
Weekend	24330.00	29396.25	27136.75	27518.00	30212.11	27718.62	39.23

Fig. 5. Number of monthly visits to web sites »Croatian Museums Online« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/.
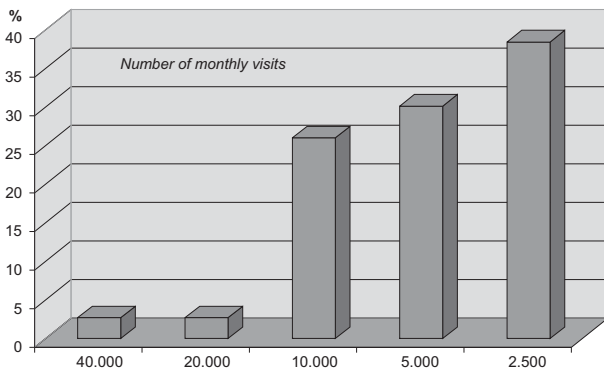
ning and on weekends, as was assumed by the creators of Croatian online museums.

Total monthly visitation rate

The respondents in the poll were answering the following question: »On the average, how many times a month do Internet visitors »click« the CVM address?« The basic descriptive analysis of their answers are shown Table 9 and Figure 5.

To compare the average answer from the respondent with the results obtained from CVM sites »web-logs«, the average monthly number of visits was computed for the period January through May of the current research year.

The hypothesis would be supported by the existence of statistically relevant difference between respondents' answers (in terms of average poll result) and the average

number of monthly visits derived from the »web-log« statistics.

If the difference were not statistically relevant, the affirmative hypothesis would have to be dismissed and the zero-hypothesis would have to be accepted, which would mean that the respondents had a correct perception of the number of monthly visits to Croatian online museums.

The results were compared by means of t-test for comparison of sample mean (poll results: M=6712.33) and given constant (data from »web-log« statistics: 61001.60). The results of statistical analysis indicated that the respondents have statistically relevantly underestimated the number of monthly visits (t=68.145; p<0.01).

The analysis of differences in answers according to employment place showed that the respondents from the company NOVENA (M=12142.85) had a statistically relevant more accurate assessment of the number of monthly visits than the museum employees (M=6136.36; t=2.28, p<0.01), although this assessment was still significantly lower than the actual values obtained from »web-log« statistics.

Table 10 shows a number of monthly visits to the web sites »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, according to »web-log« statistics (Table10).

Figure 5 shows a number of monthly visits to the web sites »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/.

Figur 6 shows »web-logs« i.e. actual data on the average monthly visits to web sites »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, in comparison with the perception

TABLE 9

NUMBER OF MONTHLY VISITS TO WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/

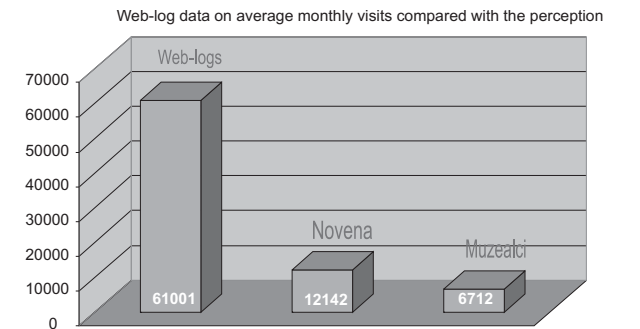| Number of monthly visits	Frequency	%	% without missing data	Cumulative %
40,000	2	2.7	2.7	2,7
20,000	2	2.7	2.7	5,5
10,000	19	25.7	26.0	31,5
5,000	22	29.7	30.1	61,6
2,500	28	37.8	38.4	100,0
Total	73	98.6	100.0	
No response	1	1.4		
Total	74	100.0		

Web-log data on average monthly visits compared with the perception

Fig. 6. »Web-log« (actual) data on average number of monthly visits to web sites »Croatian Museums Online« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/ compared with the perception of the professionals (museum workers) and technical creators of web sites (Novena).

TABLE 10

NUMBER OF MONTHLY VISITS TO WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, ACCORDING TO »WEB-LOG« STATISTICS

	Jan.	Feb.	March	April	May	Average of all months	Average response
Number of monthly visits:	59615	53571	64386	64556	62880	61001.60	6712.33

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of the professionals (museum workers) and technical creators of web sites (Novena).

Total daily visitation rate

The respondents in the poll were answering the following question: »In your opinion, how many times a day on the average do internet visitors »click« the CVM address?«. The basic descriptive analysis of their answers are shown in Table 11 and Figure 7.

To compare the average answer from the respondent with the results obtained from CVM sites »web-logs«, the average daily number of visits was computed for the period January through May of the current research year. The second hypothesis would be supported by the existence of statistically relevant difference between respondents' answers (in terms of average poll result) and the average number of daily visits derived from the »web-log« statistics.

If the difference were not statistically relevant, the affirmative hypothesis would have to be dismissed and the zero-hypothesis would have to be accepted, which would mean that the respondents had a correct perception of the number of daily visits to Croatian online museums.

The results were compared by means of t-test for comparison of sample mean (poll results: M=384.05) and given constant (data from »web-log« statistics: 2018.20).

Figure 5 shows a number of monthly visits to the web sites »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/.

Table 12 shows the average number of daily visits to the web sites »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, according to »web-log« statistics (objective method).
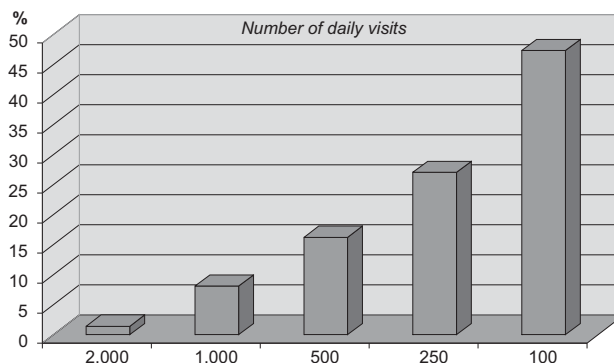
Fig. 7. Average number of daily visits to web sites »Croatian Museums Online« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm--pregled-muzeja/, according to polled respondents (Novena and museum workers).

The results of statistical analysis indicated that the respondents have statistically relevantly underestimated the number of daily visits (t=45.230; p<0.01).

The analysis of differences in answers according to employment place showed that the respondents from the company NOVENA (M=750) had a statistically relevant more accurate assessment of the number of daily visits than the museum employees (M=257.46; t=4.22, p<0.01), although this assessment was still significantly lower than the actual values obtained from »web-log« statistics.

Figure 8 shows a comparative presentation of data on the real daily visits to web sites se »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/obtained through objective ana-

TABLE 11
NUMBER OF DAILY VISITS TO WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, ACCORDING TO POLLED RESPONDENTS (NOVENA AND MUSEUM WORKERS)

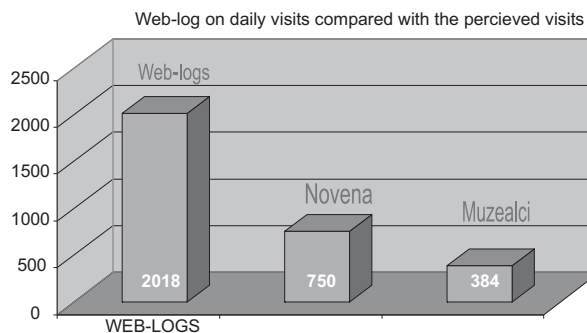| Number of daily visits	Frequency	%	Cumulative %
2.000	1	1.4	1.4
1.000	6	8.1	9.5
500	12	16.2	25.7
250	20	27.0	52.7
100	35	47.3	100.0
Total	74	100.0	

Fig. 8. Comparative presentation of data on the real daily visits to web sites se »Croatian Museums on the Internet« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/ obtained through objective analysis (Web-logs) in comparison with the poll results, i.e. offline perceived visits (Novena, museum workers).

TABLE 12
AVERAGE NUMBER OF DAILY VISITS TO WEB SITES »CROATIAN MUSEUMS ONLINE« http://www.mdc.hr/hr/muzeji-u-hrvatskoj/hvm-pregled-muzeja/, ACCORDING TO WEB-LOG STATISTICS (OBJECTIVE METHOD)

	January	February	March	April	May	Web-log average of all months	Average response
Number of daily visits:	1923	1913	2076	2151	2028	2018.20	384.05

lysis (»web-logs«) in comparison with the poll results, i.e. offline perceived visits (Novena, museum workers).

This analysis has again confirmed a part of the basic affirmative hypothesis suggesting distorted perception of CVM creators, as the average monthly and daily visitation rate for web sites of Croatian museums online by several times exceeds the expectations of creators of online museum contents and of employees of Novena.

It can therefore be said that in this respect, too, the offline perception of respondents essentially differs from the actual habits of online museum visitors.

Considering all the conducted research, the basic scientific hypothesis can be confirmed and it can finally be said that the offline perception of respondents is diametrically opposed to the actual (online) perception and to the habits of online museum visitors, according to criteria of number of visits, way of accessing online museum sites, frequency of visits and time of visits.

Conclusion

Creation and evolution of visual message perception and reception has started as early as in Palaeolithic. At first they were primitively shaped drawings explaining the tactics of tribal hunting or attacking the enemy and such ancestral messages can be found on various localities worldwide. In the science of the new age the anthropology, visual anthropology and/or cyber anthropology are faced with a crucial challenge of researching the way in which a content is perceived depending on its online/offline environment as a foundation of the new social communication of the 21st century.

Through advancing new technology, perspective of museum institution and museum profession is changed.

During the past few years many questions came in to light regarding future of museums, especially in terms of presentation of its content on the web, so far those questions still don't provide us with proper answers[13].

Visualisation of communication processes between communities or individuals recorded or photographed is very important, as it is documenting – there and then – the specific features of various community groups in their encounter with the researcher. In terms of museums and film industry, it is a sort of ethno-documentary pursuing originality and objectivity in recording the given subject, thus fulfilling the research mission[12].

Nielsen's research confirmed that the average time spent on the home page is 56 seconds. In this period of time the internaut wants to find as much as possible information and therefore proactively perceives even those contents that include only indications of required information[14].

In order to adequately respond to this challenge we need to design processes and procedures for managing the online communication aiming to make its effect as complete as possible. The research conducted and presented in this paper elaborates the differences of offline and online perception, thus indicating the importance of studying cyber anthropology as a sub segment of visual anthropology.

Additionally, in terms of the results gathered the methodology of online Internet research is significantly more relevant than the classic methodology (poll). In the research we have used two approaches for measuring the level of perception of visual stimuli in Internauts for subsequent analysis of effects of multimedia messages: the subjective and the objective method.

In subjective method the Intrrenaut perceives the offered visual content and is then given a questionnaire (answering the questions using multiple choice answers related to the viewed online content), thus momentarily suggesting the perception of own online observations. There is an objective issue in this method based on the »human factor« – the respondent has a subconscious need to provide socially acceptable answers in the broadest sense, which then partly relativizes the results obtained in the research, as they depend on the context of information content.

In the objective method the user is undisturbed while viewing the offered interactive online content, and we then use the »web-log« files of his searches and perception of the visited web sites for a very precise analysis of Internaut's preferences. In this way we can find out how much time the Internaut has spent on a certain website, how many »clicks« were made to certain visual stimulus (image, *etc*.), which key words were entered into the search engine, etc. This method – based on the interpretation of »web-logs« – undoubtedly has a very high analytic potential.

In the later development of mankind the visual expression became an important component of the process of evolution on several levels: from the existential over the economic to the artistic level. However, throughout this development there is always the question of the level user's perception of visual information in the medium carrying such information.

Does the physical position of information in a medium contribute to the efficiency of the message? Do the same rules of content positioning apply to classic (offline) and online media (Internet)? What is the first thing observed by the user upon opening the web site and what does the visual viewing of the content look like? What are the subjective and objective methods for investigating it?

The answers to these and similar questions fall into the domain of cyber anthropology. They will significantly improve the presentation of interactive multimedia contents on the web, thus marking the new era of social communication.

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ISTRAŽIVANJE O PERCEPCIJI KREATORA ONLINE MUZEJA U KORELACIJI SA STVARNIM NAVIKAMA INTERNAUTA

S A Ž E T A K

Cyberantropologija se, kao podvrsta antropologije, ubraja u najbrže rastuće podgrane znanstvenih područja. Ona se temelji se na sinergijskim učincima multimedijskih sustava i hipermedije, koristeći njihove komparativne prednosti. Jedno od najneistraženijih područja cyberantropologije jest odnos pojedinca i društvenih skupina prema nekom multimedijskom dokumentu, u smislu njihove percpcije tog subjekta. Naime, temelji socijalno – informacijske percepcije u društvu kreirani su na evidenciji realnog života, dok se ovaj put susrećemo sa uspostavom percepcije na razini virtualnog tj. »online« života. Postavlja se retoričko pitanje: je li identičan sadržaj izaziva iste ili različite korisničke reakcije, u ovisnosti o tome je li percipiran u »offline« ili »online« obliku, odnosno u kojoj mjeri medij (a ne informacijski sadržaj) diktira korisničku percepciju. Tim tragom, istraživanje pod nazivom »Percepcija kreatora hrvatskih muzejskih online sadržaja i stvarne navike posjetitelja hrvatskih online muzeja« može biti ogledan »case study« utjecaja »cyber potencijala« na klasičnu antropološku paradigmu.