
Web-based youth communities in the light of cyberspace psychology

Eugenia Kovatcheva

Sofia University, Bulgaria
E-mail: epk@fmi.uni-sofia.bg

Piet Kommers

University of Twente, Faculty of Behavioural Sciences,
Division of Educational Instrumentation,
P.O. Box 217, 7500 AE Enschede, The Netherlands
Fax: +31 53 4894580 E-mail: Kommers@edte.utwente.nl

Abstract: The internet new media creates new types of communities – online or web-based communities in virtual reality. Everyone, to a certain degree, is involved in building and creating online communities. The main aim of this study is to make an overview of cyberspace technology and to extrapolate the influence of computers, technology and virtual environments on the psychology of Bulgarian students (individuals and groups). This study is focused on the chief features of web-based life in web-based communities. Web-based youth communities are capable of mirroring the behaviour of people in virtual reality.

Keywords: web-based youth communities; cyberspace psychology; identity; group formation.

Reference to this paper should be made as follows: Kovatcheva, E. and Kommers, P. (2004) 'Web-based youth communities in the light of cyberspace psychology', *Int. J. Web Based Communities*, Vol. 1, No. 1, pp.46–57.

Biographical notes: Eugenia Kovatcheva is an Assistant Professor at the University of Sofia, Bulgaria. She has started working in the area of information technology for education since 2000 and has begun research on the psychological aspects of cyberspace and its impact on human beings.

Piet Kommers is an Associate Professor at the University of Twente. His specialty is Media Psychology, Cognitive Ergonomics and Education. Recently he co-chaired the Conference 'WWW-based Communities' in Lisbon. The conference showed a vivid interest in new societal effects of persons' life after being connected via the internet. Piet's research agenda for the coming years is the ongoing impact of the new media members like virtual reality and mobile devices on the way persons share emotions, expertise and learning. One of the critical aspects of social interaction is its opportunity to consolidate and reconsolidate conceptual understanding so that next stages of learning may take place. Recently he is invited as lecturer to lead a substantial project in mediated learning communities in the FONTYS teacher training faculty in the Southern regions of The Netherlands.

1 Introduction

Internet creates new virtual worlds with new senses of life – creating new types of communities – online or web-based communities. The new information technology paradigm provides the basis for its pervasive expansion throughout the entire social structure. The conversation between the virtual and the real world started when the internet became accessible to the public more than ten years ago. Ritterband, Gonder-Frederick, Cox, Borowitz, West, and Clifton [1] asserted that new meanings were being introduced in new terms. The main challenge of this study is to make an overview of cyberspace technology and to extrapolate the influence of computers, technology and virtual environments on the psychology of students (individuals and groups). Suler [2] defines this influence as cyber psychology. Everyone, to a certain degree, is in some way involved with building and creating online communities and connected with cyber psychology. This study focuses on the main features of web-based life in the virtual reality of web-based communities.

2 Web-based communities

Let us first determine a community. A community of persons derives its nature from the fact that its members share a common location, cultural/ethnic background, interest, profession, or a common existential awareness. In more general terms, we can say that a community expresses any kind of commonality, including temporary interests or needs. Even from an outsider point of view, it can be an arbitrary attribute that persons have in common; it is up to the momentary competition among various fields of motivation if persons commit themselves to a certain community. An example of how versatile and even aggressive community formulas can be is the notorious example of the Java programmers' community that is aimed at optimal sharing of high-quality programmer expertise. This community had agreed that more than 12 members would drastically reduce because of overheads. Its member thus agreed that if one brought in a new member, one of its sitting members should leave, and again that the members who avoid risks by not proposing new members should be a candidate for exclusion as well. Though this community did not survive for long, its agility drew attention and may still be rephrased because of its anarchical nature. It shows that communities based on virtual presence will show mechanisms that differ from the communities based on a common topology.

Let us consider the phenomenon on the internet that is, the creation of people groups or online communities. When we look at the web-based communities, we have to mention some specific point of view for these online communities, that is, the means of communication. There is also the need for using suitable software.

2.1 Definition

A web-based online community is a group of people who meet together online in cyberspace [3]. It has four components:

- 1 *People*: People and how they communicate.
- 2 *Purpose*: People's needs and their purpose for communicating.
- 3 *Policies*: People behaviour and established policies to guide such behaviour.
- 4 *Software*: To support the interaction and influences of people's behaviour.

There are different emphasis, depending on who you talk with, and they may be placed on each of these four components. A perspective balance is needed that takes account all components.

2.2 Characteristics of online communities

“Most important, remember that a community is more than just software, *a community is organic*, it evolves and changes over time. Your job as a developer or moderator is to support that evolution by working with the community to understand what it needs.” [3]

An online community is concerned about:

- *Sociability*: It is supporting social interaction online for the people involved in it. The policies of the community regarding the scope for private communication, exchange of personal information and their security need to be examined.
- *Usability*: It is how the software is designed to make it user friendly for intended users, that is, to make it controllable. Usability refers to ease of navigation, easy access, information design, and dialog support. *Usefulness* relates to relevance, that is, do the functions and information, match what the user actually needs?

The main arena for creating web-based communities is cyberspace.

3 Cyberspace

The term cyberspace was coined by William Gibson in his novel ‘Neuromancer’ (1984) in which he says:

“A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphical representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity: Lines of light ranged in the non-space of the mind, clusters and constellations of data. Like city lights, receding....”

William Gibson

Encarta [4] has described the term cyberspace as

“...an imagined place where electronic data travel: the notional realm in which electronic information exists or is exchanged an e-mail message is lost in cyberspace.”

and

“...a virtual reality – the imagined world regardless of its physical position.”

4 Cyber psychology

In cyberspace, people create, develop and destroy web-based communities. They behave as if they are in a real world. The study of human behaviour in cyberspace, that is, its principles for understanding the psychological impact that cyberspace has on people is called *cyber psychology*.

4.1 Factors

There are three main factors – affective, cognitive and sensori-motor [5].

4.1.1 Affective factors

The emotional and motivational factors of a person while he/she is in cyberspace.

4.1.2 Cognitive factors

Cyber psychology is a great resource for studying the cognition of people because cyberspace is equivalent to the human mind. People are interacting exclusively with their minds through the internet.

4.1.3 Sensori-motor factors

Sensori-motors are the least important factor involved in cyberspace interaction. There are practically no sensori-motor factors involved when people interact through the internet. Everyone is seated in front of a computer screen and is either using a mouse or a keyboard to input or receive information. However, the implications of the absence of sensori-motor factors in the interactions of people will become very significant as more people use the internet as a communicating device.

4.2 Aspects

Cyber psychology deals with the human mind inside and outside of cyberspace. It is very important to understand what is involved on the internet, the experiences and situations that occur, and how users can experience and view their online personalities. The identity in cyberspace and creation of virtual reality, virtual presence, and creating groups or online communities, are the main aspects for understanding human behaviour in cyberspace.

4.2.1 Identity

Identity is the most important factor on the internet. How would people like to be understood or look like on the internet? There are people who use the internet under assumed identities. If there are no sensori-motor factors involved, then individuals do it to keep themselves anonymous from other people. Some take on assumed identities to hide their true selves or because they want to experience what it is like to be from the opposite gender on the internet. Changing of identity is the main attraction of the virtual

reality on the internet for most people, especially in chat rooms and messengers or in other one-to-one conversations. Being in the shoes of someone else to express hidden sides of our imagination is enticing.

4.2.2 Virtual reality: creation and presence

Virtual reality exists in cyberspace and not in the real world. It is different because like dreams [2].

The human being cannot create or visualise what virtual reality is – it is mind creativity, artistic ability, and imagination. It is a virtual place where people are happy and satisfied. The fact is that when people use computers, they are having an exchange with other human beings through the machine, not with the machine. Computers are convenient and powerful extensions of the human mind and every characteristic of the mind can be expected to show up as a property of cyberspace. The relationship between Cyberspace and the mind is a dual process [5]. Computers provides people with the technology to visualise other people's thoughts, feelings, emotions, creativity, imagination, artistic ability, and spirituality in a way that they would not have ascertained from other people. Computers are giving people a chance to view and visit people from all over the world. It takes people with a common interest to make cyberspace a comfortable and sociable place to relax, visit, socialise, and interact with the people in it by creating web-based communities.

5 Psychological dimensions

The virtual world is quite different than the real one, but also follows it. Digitising people, relationships, and groups has stretched the boundaries of how and when humans can interact. Suler [2] explores some of the psychological features of cyberspace as to how people behave in this new social realm. In different online environments there are different combinations of these features, thus resulting in a distinct psychological quality to each environment that determines how people experience themselves and others. These features may be considered as the fundamental elements of a conceptual model for a psychology of cyberspace – reduced sensations, identity flexibility, altered perceptions, equal status, transcended space, temporal flexibility, social multiplicity, and media disruption. The basic psychological features of cyberspace shape how people and groups behave in those realms. Online behaviour will always be determined by how those features interact with the characteristics of the people in those environments. A variety of systems might be useful in classifying those characteristics. The focus is on specific features of the user, such as the person's computer skills, goals for using the internet, demographic characteristics (age, social-economic status, occupation, etc). When human behaviour on the internet is taken into consideration, it has to take into account the fact that the internet is not just one environment, but several. Cyberspace can influence the way people behave, sometimes for the better, and sometimes for the worse. Suler [2] explores the psychological dimensions of environments created by computers and online networks. It is intended as an evolving conceptual framework for understanding the various psychological components of cyberspace and how people react to and behave within this environment. The online behaviour of people becomes part of the internet's

psychological environment for others, creating opportunities for shaping the way for a new territory for human interaction. There are four psychological dimensions according to Suler [2], and James [5] – the basic psychological qualities of cyberspace, psychology of the individual in cyberspace, psychology of cyberspace relationships, and group dynamics in cyberspace.

5.1 The basic psychological qualities of cyberspace

This dimension includes cyberspace as a psychological space and its basic psychological features, as well as cyberspace as a dream world, coping with spam, and no interactivity with the virtual world.

People have noticed that they have a conscious and/or a subconscious mind when they enter the world of cyberspace [6]. The conscious mind is needed to motivate and drive people into doing what they want to do on the internet. The subconscious mind is needed to create an atmosphere within the mind to experience and visualise from the internet. This dimension explains what people do and do not like in a particular place that they visit.

5.2 The psychology of the individual in cyberspace

The psychology of the individual in cyberspace has to be considered in two ways – first, the psychology of human – computer interaction, and second, how people identify themselves in the virtual world.

5.2.1 Human-computer interaction

Now, let us describe a phenomenon for human-computer interaction. There is a set of boundary negotiations [6] describing the story of the changing impact of the computer on human psychology and people evolving ideas about minds, bodies, and machines. A new sense of identity that is de-centred and multiple emerges. The trends in computer design, artificial intelligence, and in people's experiences of virtual environments are a dramatic shift in people notions of the self, of others, and about machines and the world. The computer emerges as an object – as role-playing games on the internet can develop a way of thinking in which life is made up of many windows and real life is only one of them. The players also discover that the notion that they are a unified self is false. Turkle [6] asserts that the personal computer is an 'object to think with' for understanding the changes computers are into our minds. The analyses of human behaviour in a variety of contexts that range from the all-familiar e-mail, to synchronous or asynchronous, graphical or textual communication environments and the specificity of online contexts, as well as the similarities between human behaviour, online and offline, is taken into account. The web users' behaviour and the ways in which it affects other participants among the different electronic environments available also change.

In human-computer interaction, transfer to computers and cyberspace, addiction to computers and cyberspace, regressive behaviour in cyberspace and integrating online and offline living, are important roles. There are several levels of internet counseling: non-interactive, information on mental health, self-help resource materials, helping and referral agencies, provider lists and interactivities: synchronous and asynchronous chats,

support chat groups, e-mail, testing and assessment, e-mail counseling, audio plus whiteboard, full realtime audiovisuals. As more and more software gets commercially available, it becomes easier for people to build their own personal representatives. As bandwidth increases and compression becomes better, online virtual worlds grow to become more than real.

5.2.2 Individual identification

Personality types and identity management in virtual reality was discussed above as the most important features of cyber psychology. It relates to the unique roles in cyberspace, and online gender switching. The phenomenon of anonymity in virtual reality leads to a feeling of freedom in cyberspace.

People use the internet to keep themselves anonymous from other people. Some assume changed identities to reveal new personalities because they want to experience new feelings. For most people, identity changing is as an attraction of the internet.

5.3 Psychology of interpersonal relationships in cyberspace

The normal social constraints and the conventions of face-to-face meetings are left behind in cyberspace. There are in-person versus cyberspace relationships, transient and long term online relationships, e-mail or chat communication and relationships. The identities assumed on the internet as identified with the second psychological dimension mentioned, relates to cyberspace interpersonal relations. People in a face-to-face meeting have a sensori-motor factor for the persons facing them. In cyberspace, this factor does not exist and individuals just react to the written text and pictures. In cyberspace, there is transference among people online and ways to resolve conflicts online. In interpersonal groups and inter-groups (relating to fourth dimension group dynamics), behaviour according Wallace [7], is the possibility of assumed anonymity and actual physical distance between web participants. These lead to positive or negative behaviour in online friendships and romances, or to the psychology of aggression.

5.3.1 Group dynamics in cyberspace

This refers to the dynamics of group behaviour online – the psychological phenomena of conformity, polarisation, conflict and cooperation occurring in mailing lists, e-mail traffic, news and discussion groups and chat rooms. People increasingly make all sorts of explorations and the social impact of such explorations may turn out to be enormous. Turkle [6] distinguishes two possibilities: first, isolation and alienation of users, and second, they no longer live in isolation and become more flexible, being able to interact successfully, in team efforts, with people who are very different from them. In other words, *group dynamics in cyberspace relate to web-based communities*.

6 Research

The history of this study started two years ago. We started to observe the students first from my own experience, then through discussions with system administrators in internet clubs, and from learning web maintainers and parents.

6.1 Own experience

As an Assistant Professor in Computer Systems and Technologies, at the Faculty of Mathematics and Informatics, University of Sofia, Bulgaria, I meet the students in the first level at the university each year. After school hours, I ask them about their interests, their motivation and goals.

6.2 System administrators

First, discussions about students' behaviour on the internet were held with internet club administrators, parents and educational web sites developers. In Bulgaria, there are plenty of internet clubs. Clubs administrators were asked about what students did on the internet, and for how long.

6.3 Parents

The attitude of parents is the second group of prerequisites for this research. Their attitude was found to be positive.

6.4 Learning webs maintainers

The third group of preliminary discussions were held with developers of educational web sites. The developers receive feedback from the students. The opinions were found to be in two extremes. One is that they like visiting websites and it is fashionable to learn online. The second is that websites are seen as competition for teachers and publishers.

After these initial discussions, I found that there were changes in the behaviour of students using the internet. There are differences between the motive patterns of boys and girls using the internet. In most cases, girls are more motivated to learn via the internet and boys to master computer skills, i.e., to become hackers. Such pattern-determination and identification of internet motives are important for the development of better learning webs that support the educational process in Bulgarian schools, and to help developers of the learning webs work better.

A screening questionnaire was developed at the start of the research to show tendencies of Bulgarian students and as a basis for the main questionnaire. The target group were students in the 9–17 year old age group.

The *motives* that students give for using the internet are: to play online games with friends, to chat, and to get away from home.

They usually spend *almost every day* and at least two hours on the internet. Most of the time they chat, play games or download music. From time-to-time, they surf on the internet for new information. One of the boys being questioned said that he would like to be a hacker and he studies through the internet.

The students in question said that they were *looking for* new games, music, movies, weapons, cars, and sports information on the internet.

The main challenge of this study is to extrapolate the influence of computers, technology and virtual environments on the psychology of web-based youth communities. The study is based on available literature and empirical studies [8]. The instrument used in the study is a web-based questionnaire. The design of the study is of a

retrospective survey-type. Two sets of questions were asked: demographics, which were used as independent variables stratifying the population into subgroups, and related to internet use, which were used as outcome characteristics. The obtained results gave us an overview of Bulgarian internet users at the secondary school stage.

After survey, we may report that:

- Boys and girls both begin using the internet at approximately the age of 12 years, and this is true regardless of their areas of residence.
- Students reported that English was their first foreign language and they mentioned Russian as their second foreign language, a reflection of the post-communist period in the country. Some of the students said that they use Turkish since they belonged to the Turkish minority in Bulgaria.
- Students made self-estimation of their skills. The results show that longer the experience on the internet, the greater the self-esteem of internet skills, but not greater self-esteem of computer skills.
- Students visit portal sites and learning sites for developing web applications and programs, but not related to school activities.
- Students motivated to use the internet for educational purposes use it for entertainment as well, while students who prefer having fun on the internet, do not use it for learning. It was found that the internet was the cheapest form of entertainment for students.
- Boys and girls begin using the internet mostly for entertainment and less for educational purposes. First, students reported that they downloaded music and movies – Second, the WWW was used for fun and chatting – IRC and chat rooms, and third, the internet was used for sending e-mails. The WWW was also used frequently for educational purposes. Less frequent uses were for one-to-one conversation (ICQ, messengers) and playing games via the internet.
- There is difference in manner in which girls and boys behave on the internet – the girls use the internet for studying and they are less oriented toward using the internet as an alternative to the cinema. The boys prefer improving their computer skills and using the internet to relaxing.
- There was one group of boys and girls that behaved in a similar manner on the internet. They use the internet frequently for *mastering computer skills* and *learning* via the net. Students *often passed time* in cyberspace, and *very often* they used the internet for *chatting*. These results are second in the list of students' answers, i.e. the difference between answers on the first place is less than 10% – the students of this group are almost half of the observed students. This is a common pattern for boys and girls and learning web developers have to take into account these motives to develop successful websites.
- Parents encourage students to use the internet.
- In the survey, two main hypotheses coherent to our discussion were made: Students begin using the Internet to change their behaviour by being dependent on cyberspace and as an escape from the real world.
- Anonymity on the internet is a premise for changing one's identity.

Three sets of questions addressed students' interests on the internet – about how long they were in cyberspace, what they were looking for, and so on. These questions related to the behavioural changes in students caused by internet usage. Such changes were addressed by comparing students' behaviour before and after using the internet in terms of spending time with friends, involvement with interesting issues, meeting interesting people on the internet, and whether the internet was a totally different world for information and fun. The frequency analysis of the variable, related to the time spent on the internet, demonstrates that students change their behaviour, in that they spend much more time surfing on the internet (69.9%). While surfing the internet, students more often meet interesting people (50.7%) and realise much more possibilities of the internet (55.6%). More than half of the students thought that they were in the other world while surfing on the net (33.4% – much more, 28.2% – more), but a quarter of the students said that they had an different opinions. In addition, students found more or much more entertainment on the internet when they were together with friends and they kept their interests to their favourites. A total of 58.9% said that there was no difference before and after. At the same time students meet more friends 48.5%, or there changes (30.3%). This shows that *students seek social contact* and so access the internet at clubs, which will be shown later. Factor analysis with Varimax rotation showed that our variables depend on two 'hidden' factors, which can be interpreted as the following variables:

- Escape from the real world: it describes the attractive elements of cyberspace and motives for escaping there.
- Dependence on the internet: it means students spend more time on the internet, meet real friends often and follow their interests.

These factors show that there are changes in students' behaviour – dependence on the internet and escape from the real to a virtual world. But, there is no *real* alienation. Bulgarian students still prefer social contacts with friends in their real community.

We may identify an additional result. It was mentioned earlier that Kraut [9] reported a paradox that reduces communication, and causes depression and loneliness. This paradox disappears after four years [10]. We investigate here if this paradox exists, and if so, does it exist for Bulgarian students. We call it the alienation effect and is as additional result from our analysis. About 85% of the students access the internet from home, while 62.7% still prefer going to internet clubs. This is an important result demonstrating that the alienation effect observed elsewhere is not so strong in Bulgaria.

One reason for this may be that internet clubs offer cheaper and faster access than the accessibility from home via telephone lines (cable internet access is still not widely available). An unexpected result from the study was the finding that the least frequent use for the internet was for game players. The reason behind this is that in Bulgaria, the speed of internet access is generally insufficient for playing online games. The favourite games were strategic games and 30 out of 50 students reported the fact. Most students spent two to three hours a day playing games, with 17% spending more than three hours daily. Only 12% of the students reported that they do not play internet games.

The second point of the study, *anonymity* on the internet, is one of it's the most attractive features. Most users alter their identity (98.7%) more than half of the students (57.3%) use at least one nickname. For teenagers, it is not so popular to have their own web pages as their identities could be revealed through web pages. Only 43.2% of the

students reported having their own web pages. The study shows that boys and girls are romantically involved in cyberspace (52%), but, this involvement does not continue in real life (72%).

Factor analysis with Varimax rotation shows that our variables depend on three factors. They are interpreted as the following new variables:

- ‘Imagination’, which includes more than one nickname and means being romantically involved in cyberspace only.
- ‘I’m real’, which includes the owner of the web page and means the person is romantically involved in real life outside of cyberspace, but in the opposite direction.
- ‘Identity alteration’ on the internet, the most important variable-students change their identity, hidden behind the anonymity on the Internet.

These three new components present the real situation on how students change their identities when they are in cyberspace. First, students start with an identification name that is, a nickname for e-mail or chat with which they get involved in cyber life. There they start a romance which may or may not continue in real life. But, usually romance happens and it all starts here with ‘Imagination’.

The next component presents the real person in cyberspace – who has his/ her own web page and who says ‘I’m real’, and does not get involved in romance via the internet.

The third component is for the students that change their personality, that is, ‘identity alteration’. It was discussed above that almost all students try to be anonymous in cyberspace and change their identity (98.7%).

7 Conclusion

Virtual world follows real life, but, it changes its members. Web-based youth communities of Bulgarian students presented here prove that cyberspace is essentially the same throughout the world. Students in cyberspace escape from the real world into virtual worlds and it seems that some of them become internet dependent. The alienation effect for Bulgarian students proved not to be so deep – they enter virtual reality as a real community and then create new web-based communities. In this new community, students prefer to be imaginary or real; the imaginary ones present themselves under different identities and the real ones only manifest in their real identity. Web-based youth communities in the light of cyberspace psychology are mirrors people’s behaviour in virtual reality.

References

- 1 Ritterband, L.M., Gonder-Frederick, L., Cox, D.J., Borowitz, S., West, R. and Clifton, A. (2002) *Cyber Psychology: Internet Interventions*, Charlottesville, University of Virginia Health System, Virginia.
- 2 Suler, J. (1998) *Applying Social-Psychology to Online Groups and Communities, Cyberspace as Dream World*, [Online] Available: <http://www.rider.edu/~suler/>.
- 3 Preece, J. (2001) *Online Communities: Designing Usability and Supporting Sociability*, Chichester, New York, Weinheim, Brisbane, Toronto, John Wiley & Sons, Ltd.

- 4 Encarta® (World English Dictionary [North American Edition] © & (P) (2003). Microsoft Corporation. Developed for Microsoft by Bloomsbury Publishing Plc.) [Online] Available: <http://www.encyclopedia.com>.
- 5 James, L. (2000) *Cyber Psychology: Principles of Creating Virtual Presence, Getting Hold on Cyber Psychology: in the Eyes of the Beholder*, [Online] Available: <http://www.soc.hawaii.edu/leonj/leonj/leonpsy/cyber.html>.
- 6 Turkle, S. (1997) *Life on the Screen: Identity in the Age of the Internet*, New York, Simon & Schuster.
- 7 Wallace, P. (1999) *Thy psychology of the Internet*, Cambridge University Press.
- 8 Kovatcheva, E. (2003) 'Cyber psychology in education – based upon secondary school students in Bulgaria', *MSc Thesis, TAET International Masters Program*, University of Twente, Enschede, The Netherlands.
- 9 Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T. and Scherlis, W. (1998) 'Internet paradox: a social technology that reduces social involvement and psychological well-being', *Journal of American Psychologist*, Vol. 53, No. 9, pp.10171–031.
- 10 Kraut, R., Kiesler, S., Boneva, B., Cummings, J.N., Helgeson, V. and Crawford, A.M. (2002) 'Internet paradox revisited', *Journal of Social Issues*, Vol. 58, No. 1, pp.49–74.