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Documented Norms and Conventions on the Internet

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The Internet plays an important role as a means for worldwide social contact. The establishment and maintenance of social and group relationships within electronic worlds require social norms and behavioral conventions as in the real world. This article investigates some of the available electronic media: e-mail, mailing lists, newsgroups, chat rooms, and multiuser dungeons or multiuser domains (MUDs). Peculiarities of the media are analyzed through studying the documented behavioral norms and social conventions. We look at desired behavior, disruptive behavior, and sanction mechanisms. A conclusion that may be drawn is that within these virtual environments, explicitly documented norms and conventions play an underlying role in how individuals behave in addition to what type of behavior they expect from others.

1. INTRODUCTION

The Internet, similar to previous inventions (i.e., television, radio, and telephone), has had a dual purpose as traditional barriers of physical distance separating societies have not only disintegrated, but individuals, groups, communities, and nations are now part of the interconnectivity of a networked environment. A community no longer is perceived within physical dimensions or limited by physical boundaries. The cultural norms, values, and ideas that shape members of that community are linked and shared with other communities through virtual environments such as chat rooms, multiuser dungeons or multiuser domains (MUDs), and newsgroups. Within a shared virtual environment, individuals and groups collaborate, interact, and communicate in one space that through shared meaning, understanding, and identification may be perceived as a place.

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The use of the Internet is no longer restricted to a small group of technically engaged people; instead it is becoming a common means for ordinary people to establish and maintain social relationships. This requires individuals to develop an understanding of how social relations may be established across time and space, in which people are connected through their *virtual* rather than *physical* presence. In real-world, face-to-face settings, an important mechanism to achieving congruent behavior is provided through the co-presence of observing others and adjusting one's behavior accordingly. However, in most current electronic environments, there is a lack of mutual awareness and a low level of social presence (Short, Williams, & Bruce, 1976). The lack of implicit means to achieve congruent behavior requires that explicit means be used to develop and communicate behavioral rules. Aspects of these virtual environments that may mirror the physical world include the establishment and application of behavioral rules or social conventions that regulate behavior. Understanding the existing rules provided for social interaction may enhance one's understanding of social behavior on the Internet.

The aim of this article is to develop a better understanding of these behavioral rules and social conventions and how they are being applied on the Internet. We begin with a brief outline of the role that norms and conventions play within the real world and their relation to the environment. Next, we outline the role of the Internet in the community-building process. We present the most relevant asynchronous (e-mail, newsgroups, mailing lists) and synchronous (chat rooms, MUDs) communication media based on the documentation provided in the literature. For each medium, we analyze a selection of rule sets currently documented as netiquettes on the Internet. We will learn how netiquettes relate to real-world conventions, how they aim to support desired behavior, and how they attempt to contribute to the prevention or sanction of undesired behavior. Particular attention is paid to how netiquettes propose to cope with the low level of social awareness and social presence provided within these media. From this analysis, we learn about the management of social relationships within electronic media. We conclude with a comparison of the different media based on what was learned from the written netiquettes.

2. BACKGROUND OF THE WORK

Social norms or moral rules play an essential role in our existence within society. Following these rules helps ensure one's survival, happiness, and well-being as a societal member. Rules exist not only for the benefit of an individual, but extend to offer a collective benefit. This ensures that order exists within the culture so that individuals of different backgrounds and different facets of thinking can function together by knowing and following societal rules. Communication, common goals, and the frequent opportunity for contact facilitate the group-forming process (Crott, 1979). Therefore, the Internet creates new possibilities for contacting people throughout the world, as well as providing opportunities for groups to form.

2.1. The Role of Social Norms

Group-forming processes are guided by the principles of proximity, similarity, reinforcement, symmetry, and co-orientation, in addition to affect and emotions (Davis & Palladino, 1995). An essential part of the group-forming process is the establishment of social norms and behavioral conventions, whether explicitly defined as rules or laws or implicitly defined through acknowledged or sanctioned behavior. Group norms "develop through explicit statements by supervisors or co-workers, critical events in the group's history, primacy, or carry-over behaviour from past situations." Norms should help "ensure group survival and increase the predictability of group members' behaviour and avoid embarrassing interpersonal situations" (Feldman, 1984, pp. 47–51).

According to Mann (1972), a large part of in-group communication refers to the maintenance of conformity. In addition, there is a close relation between conformity of group members and group cohesiveness (Davis & Palladino, 1995). Knowing and applying the right norms and conventions gives each participant the feeling of being part of the group. It may then also contribute to an easier achievement toward a common understanding and cooperation among group members.

In electronic group-forming processes, group rules encoded in norms and conventions may even be more important for a number of reasons: as a means to develop shared attitudes, to achieve congruent reactions, to contribute to achieving a mutual understanding, and to create a social reality. We expect that the lack of awareness and the low level of social presence in these media will be reflected in the behavioral rules.

2.2. The Role of Places

In the group-forming and maintenance process, environments play an important role as places where people meet and interact. Barker and Wright (1955/1971) concluded that individual behavior also depends on the affordances of a given environment. They found a structural similarity between individual behavior in the form of standardized behavior patterns and environments in the form of physical and social milieu. Environments and artifacts influence the standing pattern of behavior through their physical properties and social connotations. Milieu-conforming behavior is learned by trying something out, observing the impact, and watching others, and through imitation.

Oldenburg (1989) studied the societal importance of particular environments. He outlined how a common thread linking great civilizations and societies are informal public places such as a Biergarten in Munich or a sidewalk café in Paris, which are vital locales for socialization and relaxation. He notes that without such meeting places, inhabitants would be deprived of the types of relationships and human interaction that are the lifeblood of every urban center. These meeting places, which Oldenburg labeled as "third places," are fundamental to one's daily life as one's place of residence, which he called a "first place," and place of employ-

ment, considered a "second place." After the Industrial Revolution, the first and the second place separated.

2.3. Places in the Internet

A new type of immersion between places is occurring again involving this third place as individuals congregate online, in virtual communities. The Internet is recognized as an environment that supports forming communities (Herrmann, 1995; Reid, 1991; Turkle, 1996), so that a new way of community building is occurring as people are gathering through shared ideas rather than only through physical places. Virtual communities are described by Rheingold (1996) as providing companionship for societal members deprived of human interaction and as the global response to filling the gap left by the disintegration of Oldenburg's (1989) third places. Newsgroups, chat rooms, and MUDs are all means to assemble people who share a common interest, without the limitation of gathering in the same physical location. Apart from behavioral rules, new terms have been created for this emerging culture, such as "smileys" and other novel forms of textual, emotive expressions as well as new terms such as "flaming" and "spamming." The particularities of these electronic places will influence the behavior of their visitors (Pankoke-Babatz, 2000).

The role of netiquettes. A major difference between real-world and Internet communication may lie in the fact that the Internet provides for the opportunity of nonphysical and anonymous social interactions. The anonymity provided by the Internet may then encourage people to act with lowered inhibitions and result in making establishing contacts easier. Relationships may reach a high level of intimacy in a shorter period if very personal details are being discussed in a public forum such as a newsgroup. An extreme example is the tinysex and cybersex behavior prevalent in certain chat rooms (Hamman, 1996; Turkle, 1996). On the other hand, a relaxation of inhibitions may also result in unsociable behavior and create an environment on the Internet that reduces the authenticity of human relationships (Rheingold, 1993). Kollock and Smith (1994) stated that it is important for participants to adhere to the local rules for behavior. Internet etiquette, or netiquettes, are intended to explain to new users (sometimes referred to as "newbies") how to behave (Mandel & van der Leun, 1996).

On the Internet, we can differentiate between synchronous and asynchronous media. Synchronous media, such as chat rooms and MUDs, allow almost immediate interaction. E-mail and newsgroups, as asynchronous media, provide time-dispersed communication where temporal delays between sending, reading, and replying are common. In the following, we briefly describe each of the asynchronous media types.

E-mail. E-mail has been available for more than 20 years (Tannenbaum, 1996), although it has increased in popularity in the last 5 years. E-mail is a medium for bi-

lateral and direct communication between friends, colleagues, acquaintances, as well as strangers. The first sent e-mail message, similar to real life (Feldman, 1984), provides a first impression of the other party and may influence the type of relationship that develops. Therefore, it is necessary to facilitate a successful initial contact and learn about the netiquettes beforehand rather than through trial and error. "Learning by doing" is possible with other media; however, with e-mail, feedback is not immediately available. Since the early 1980s, netiquettes for e-mail have been recommended in a number of studies (Brotz, 1983; Pankoke-Babatz, 1984).

Newsgroups and mailing lists. Usenet, which began in 1979, organizes worldwide discussions under a set of broad headings called "newsgroups" (Rheingold, 1993). A news-reading program presents those discussions in an orderly way. Newsgroups collect the comments of people around the world in a way that enables people to address previous comments and thus, when functioning correctly, develop a kind of conversation that is documented in a "thread." A number of subcultures have developed in newsgroups. However, some newsgroups may be more similar in their behavior to a battlefield rather than a community, although these will also have their regular users and social norms (Rheingold, 1993).

E-mail based mailing lists enable individuals with common interests to collectively receive and sometimes individually "post" (i.e., send information) to the distribution list (Kehoe, 1992). Mailing lists can be created by anyone, as the only requirement for membership is an active e-mail address. In this article, we have not treated mailing lists separately from newsgroups.

Internet relay chat (IRC) and chat rooms. IRC is a popular, virtual environment where people around the world communicate online with each other using text and through thousands of channels based on a variety of different topics (Bechar-Israeli, 1995). IRC technology was developed in 1988 by Jarkko Oikarinen at the University of Oulu in Finland (Hamman, 1997). The purpose of IRC is social communication (Kelley, 1995) in real time. Once a user logs onto an IRC server, he or she joins one of the channels of interests and engages in conversation.

Chat rooms are multiuser environments that provide textual communication with others in real time. Anyone can interact in a chat room. Two examples are the travel guidebook in the Let's Go chat room (Letsgo, 1997) and the more multipurpose WBS environment (WBS, 1998).

MUDs. MUDs were created around 1978 by Roy Trubshaw for the purpose of designing a multiplayer computer adventure game (Hamman, 1996) and were originally called "multiuser dungeons." Today the name "multiuser domains" is more common. From 1990 onward, their number and usage has increased as MUDs for social interactions have become more prevalent (Reid, 1994).

Textual descriptions provide a metaphor of a physical environment. In addition, each MUD has built-in rules that outline the types of interactions that can occur and

how the culture within the world should develop (Mitchell, 1996). Before joining, a player must create a character that usually involves selecting a name and sex and providing a description. This character is the person's representation through which actions and communication occur. As the real-world sex of a player cannot be confirmed online, the opportunity exists for experimentation with gender-swapping (Reid, 1996; Turkle, 1996). In contrast to the other media described, interaction is not limited to exchanging textual messages with other players; players can also express nonverbal utterances with their avatars such as smiling or gestures. Players may interact with the environment itself, thus modifying it; for example, in some MUDs structures such as buildings can be created.

MUDs may be considered virtual environments. In purely text-based MUDs, players imagine the virtual world, whereas in 3-D MUDs the environments are visualized. The object-oriented variant of a MUD is called MOO (Lavato, 1997, 1998; Morgenes, 1997) and is a more recent development. The object orientation facilitates more complex and easier to use interaction modes to the players.

Although MUDs began as adventure games, they also exist today as social spaces (Bruckman & Resnik, 1995) or as learning environments. LambdaMOO, created by Pavel Curtis (1996) in 1990, is a well-known virtual environment with about 8,000 participants, comparable to a small virtual city. Turkle (1995) viewed MUDs as a hybrid activity between programming and "writing fiction."

3. EVALUATION OF NETIQUETTES

We use the term *netiquette* to refer to the documented behavioral norms and social conventions that we found on the Internet. With the growth of the Internet, the relevance of netiquettes is increasing. We conclude this from the high number of netiquettes found, as an Internet search request (using AltaVista) with the term *netiquette* led to more than 80,000 references in spring 2000.

The rule sets provide evidence about what is considered relevant in the particular communities; however, they do not aim to be comprehensive. The analysis of the rule sets may help one understand media-specific differences. In our analysis, we pay particular attention to how people handle the minimal level of mutual awareness and social presence provided by these media. We expect considerable differences between synchronous and asynchronous media, and we are interested to see how media-specific differences might be reflected in the netiquettes.

3.1. Methods

We combine the social behavioral findings that are specific to media, as described previously, with those documented in the sets of netiquettes. For this subsequent purpose, we collected rule sets on the Internet between November 1999 and February 2000 by using several search engines (BullsEye, AltaVista, and Yahoo) and by combining terms (*e-mail & conventions*; *newsgroups & conventions*, and so on). We tab-

ulated 18 general sets for Internet usage, 14 sets for e-mail, 24 for newsgroups and mailing lists, 18 for chat rooms, and 13 for MUDs to provide a more detailed analysis.

Netiquettes for the Internet in general, varied between 10 rules on a single page (Netiquette, 1997) and 100 rules spread over 12 pages (RFC1855, 1995) when containing separate subsets for each medium. E-mail had a mean of 18 rules on 6 pages, newsgroups: 13 rules on 5 pages; chat rooms: 10 rules on 3 pages; and MUDs: 17 rules on 5 pages.

Ninety-two percent of the netiquettes for e-mail and 71% for newsgroups were available as separate rule sets. Personal web sites for e-mail and general rules were used to provide relevant information as a service to the Internet community. For us, this indicates that netiquettes for e-mail and newsgroups are more general and independent from particular instances of service. The conventions for chat rooms and MUDs were more specific to the particular service and usually found at the entrance of that particular site (72% of the netiquettes for chat rooms and 61% for MUDs; About.com, 1999; MOO Connections, 1999).

Through our detailed analysis of the rule sets, we differentiate between the following major aspects: the desired behavior, the abusive (undesired) behavior, and sanction mechanism available. For each of these aspects, we defined a set of categories that were used for encoding the rule sets. One author performed the initial encoding; the other author checked the encoded sets.

3.2. Desired Behavior in Netiquettes

Netiquettes attempt to give optimal benefit of the medium to its users and to achieve an even distribution of effort and benefit. We have differentiated the rules for desired behavior into the following categories: awareness of audience, privacy, politeness, style, and role-playing (see Table 1).

Application of real-world rules. Cooperation within the Internet will only function when following social rules that have proven successful in the real world. Therefore, some of the rules may be transferred from the physical world. Refer-

Table 1: Percentage of Netiquettes Addressing Desired Behavior

	Awareness of Audience (%)	*Privacy (%)*	*Politeness (%)*	*Style (%)*	*Role Playing (%)*	*Total Desired Behavior (%)*
General	85	62	92	38	–	100
E-mail	71	71	86	86	–	93
News Groups	75	50	79	25	–	88
Chat Rooms	56	50	33	33	–	83
MUD	71	47	76	12	24	94

Note: MUD = multiuser dungeons or multiuser domains.

ences to real-world etiquette appear in the netiquettes for each of the media. As the following two examples indicate, rules may be explicitly referenced. The first example is for the Internet in general; the second is taken from the entrance home page of a chat room:

> "remember the human" and "adhere to the same standards of behavior online that you follow in real life." (Netiquette, 1997)

> Your conduct should be guided by common sense, basic etiquette, and these chat rules. (America Online, 1999)

A very brief and comprehensive set of general rules can be found in the netiquette (Netiquette, 1997) by Shea, which is 1 page containing 10 rules. Many other netiquettes sites provide links to this particular set.

Awareness of audience and privacy. Particular to the media, 56% to 85% of the netiquettes contain rules that refer to the awareness of audience, although the presence of the audience may not be entirely perceived. Those rules remind the users of the fact that many people may be able to read what is written and be personally affected by it.

In the case of e-mail, rules that enhance awareness regarding lack of control about the future use of an e-mail message would fall under this category (i.e., once sent the recipient may actually forward it). This may be combined with the issue of privacy, as rules often address both the perspectives of the actor and the audience:

> Never send anything you would not want to see in tomorrow's newspaper. (Email Etiquette, 1999)

For newsgroups, rules of the category awareness of audience recommend that one orient oneself toward the particular aim and culture of the group. Although it is impossible to become aware of other participants' behavior, documentation of past discussions may provide some indication of adequate behavior. Netiquettes often recommend that one observe the ongoing discussion for a period of time (called "lurking") before becoming an active participant. This enables one to learn from others about expected behavior, the desired style and mode of debate, and topics for discussion. Similar rules involving observation before interaction were also noted in the MUD and chat room netiquettes:

> Read both mailing lists and newsgroups for one to two months before you post anything. This helps you to get an understanding of the culture of the group. (RFC1855, 1995)

> Lurk, Subscribe to the group and read it for a while to get a 'feel' of the group. (ParadisePlace, 1999)

For chat rooms and MUDs, where anonymity is more prevalent, privacy is of particular relevance. Because users may create their own personae, privacy rules that convey conventions about when it is acceptable to talk about "real life" vary among different communities (i.e., a role-playing medieval adventure MUD compared with an educational MOO for a university course). The disclosure of someone's real-world identity is considered in many groups not only to be a violation of privacy, but also is seen as a more offensive act (see Section 3.3).

Politeness and role-playing. Politeness (see Table 1) is a major issue in nearly every set, that is, in 92% of the general sets and in more than 75% of the specific media, with the exception of the netiquettes for chat rooms (only 33% explicitly address politeness). Common rules in the netiquettes refer to an outlined code of conduct (use proper English, use prose command, use emoticons, respect others, be fair, be polite, protect privacy and confidence). A part of politeness is understanding and contributing to the aim of the community. These are media and community specific. We found that rules are adapted and refined according to the specifics of the media and the aim of the group.

In newsgroups, it is recommended that individuals follow the group habits, which may differ among newsgroups (Bayer, 1998; Rospach, 1996; YOYO, 1997). Concerns exist that many users only lurk or ask questions without providing answers back to the group (Kollock & Smith, 1994). Newsgroup netiquettes recommend reading the FAQs of a particular newsgroup before asking a question. One advantage of this is that unnecessary repetition of debate should be minimized. In addition, received answers could then be grouped into an FAQ.

In chat rooms, it is often advised to use greeting and farewell conventions such as "hello" and "goodbye," although it is not necessary to acknowledge every person present. It may also be obvious to regular users who the new people are by their behavior. MUDs and chat rooms sometimes advise new participants to identify themselves as such so that they may then be given assistance as well as some leeway in following conventions.

For MUDs, we had to create an additional category called "role behavior" to cover conventions that were specific to that particular MUD. For example, adventure or gaming-type MUDs suggest reviewing the history and background of the particular setting before joining the game so as to understand what role-playing behavior is expected. MUDs have specific rules addressing anonymity and the virtual personae of the players, such as respect role-playing, act appropriately in public, and be courteous as in real life (Ciskowski & Benedikt, 1995).

Style. The issue of style is addressed particularly in the netiquettes for e-mail (86% of the e-mail netiquettes). One interpretation is that e-mail may be a portal opening up a channel to a worldwide audience. Beginners do not have the opportunity to see firsthand examples of proper behavior regarding e-mail messages. Although e-mail is usually personalized, it is not synchronous so that one cannot receive immediate feedback. From a historical perspective, the e-mail community is

the largest and oldest. This has provided the community with the ability to develop its own style of writing through the use of emoticons and sets of acronyms. A typical rule with respect to style is the usage of capital letters, which is understood universally online as shouting. It is considered appropriate only when used sparsely.

3.3. Coping with Undesired or Disruptive Behavior

The importance of the social dynamics as induced by the nature of the underlying technical system becomes more apparent through what is considered offensive behavior and through prevention and sanction mechanisms for abusive behavior. From observations gleaned from studying the rule sets, we comment on areas of disruptive behavior and focus on spamming and flaming in particular.

Table 2 illustrates that the prevention of undesired and abusive behavior plays an important role in each kind of media. It shows that 71% to 94% of the netiquettes studied contain rules related to undesired behavior. However, we found media-specific differences with respect to the kind of undesired behavior to be prevented.

Undesired behavior. A particularly high percentage of netiquettes found for chat rooms (61%) and MUDs (82%) contain rules addressing undesirable behavior. As stated earlier, for chat rooms this finding is caused by the fact that many netiquettes for chat rooms often list what behavior should not occur (i.e., the "don'ts") in the community:

> You agree to not use the Service to:..."stalk" or otherwise harass another. (Yahoo, 2000)

The disclosure of personal or anonymous information is considered to be an offensive act in many chat rooms and MUDs:

> never give out personal information to strangers. (Excite, 2000)

Table 2: Percentage of Netiquettes Containing Rules Concerning Undesired Behavior

	Undesired Behaviour (%)	*Spamming (%)*	*Flaming (%)*	*Sanction Mechanisms (%)*	*Total Undesired Behavior (%)*
General	54	46	69	8	77
E-mail	43	36	43	7	71
News Groups	38	38	63	21	83
Chat Rooms	61	17	22	61	83
MUD	82	41	0	65	94

Note: MUD = multiuser dungeons or multiuser domains.

> Respect that user's desire for anonymity. (RFC1855, 1995)

In MUDs, another type of unsociable behavior often mentioned is player killing:

> The "kill" command is off-limits. If you want to role-play a death, make sure that the person dying has agreed to do so!" (Chrystal Mush, 1998)

Power gaming is another offensive behavior mentioned in netiquettes for chat rooms and MUDs. This occurs when a player takes over the personae of another player and forces this player to act as he or she wishes. This may be as simple as using the nickname of another person in a chat room or as extreme as rewriting code so that another avatar acts on one's behalf (Dibbell, 1998):

> If you're caught trying to mislead people by using certain nicknames to appear as if messages are coming from people other than yourself, you will be banned. (About.com, 1999)

> Please abide by the following code of conduct that prohibits ... using fake names or impersonating others. (CNN.com, 1999)

In the netiquettes for chat rooms and MUDs, conduct related to sexual abuse is often mentioned:

> Do not transmit via Excite Chat any information ... that is unlawful: harmful: threatening: abusive: harassing: defamatory: vulgar: obscene; or racially or ethnically hateful. (Excite, 2000)

> We discourage any of the following: ...Post or reference sexually explicit images or other offensive content. (America Online, 1999)

The ability to change one's sex has opened new opportunities to explore the other sex (Reid, 1991). But this also opens opportunities for misuse. Sexual behavior such as cybersex or virtual violence may also happen in MUDs (Reid, 1996) and in chat rooms (Hamman, 1997). In a MUD, a player may find a way to control actions of another player's character and may force it to have sex. Turkle (1996) understood this as virtual rape. Sexual attacks are explicitly forbidden in many netiquettes:

> Sexual abuse is possible on MUDs, too, but naturally this is illegal. (Deeper Trouble, 2000)

Spamming. Spamming means to post long and frequent messages or send large amounts of newsgroup postings to hundreds of newsgroups or e-mail addresses. One reason that spam is a problem is that e-mail and newsgroups enable one to easily distribute commercial material. Recipients do not have a chance to

sort out the topical contributions among the spammed material. It may also cause technical problems such as memory overflow or it may increase the local downloading time. This could result in the destruction of well-functioning groups, so it is in the interest of the community to find ways to prevent its occurrence. The wasted time spent unnecessarily downloading and subsequently deleting spam is not irrelevant, especially if the e-mail provider charges per message.

> if you send spam expect to lose your net access. (ParadisePlace, 1999)

Each contribution for chat rooms must be short—about one line the length of the text window—such that one can see several contributions in the chat window, dependent on the message length. Spamming will cause the visible chat window to be filled with the spam, rather than with message exchanges. This will remove any possibility of communication as the following example mentions:

> Do not cause any chat room screen in Excite Chat to scroll faster than other users are able to type to it or any action to a similar disruptive effect. (Excite, 2000)

Flaming. Flaming is a public personal attack. A simple, unfriendly, rude personal comment may intentionally or unintentionally start a flame war (Astrian.net, 2000) if sent to a public group rather than made as a private comment. The debate may easily become heated in a tempo that has no real-world equivalent. The most offensive dynamics of flame wars occur within asynchronous communities (Dery, 1994). The need to prevent flaming is of particular relevance to asynchronous media as indicated by the high percentage of general and newsgroup netiquettes explicitly addressing flaming (see Table 2). The absence of a social corrective mechanism and the ability of the abusers to be anonymous may contribute to uncontrollable flaming. Flaming may also result in people leaving the particular group, thus disabling previously well-functioning groups. In addition, it may not be possible to keep on topic in a group that is overrun with flaming:

> You should not send heated messages (we call these "flames") even if you are provoked. On the other hand, you shouldn't be surprised if you get flamed and it's prudent not to respond to flames. (RFC1855, 1995)

Although spamming and flaming may actually cause problems in any of the media, time-dispersed communication media such as newsgroups are more vulnerable to these types of disruptive behavior (Kollock & Smith, 1994). Respective contributions are instantly distributed, and immediate intervention is not possible in this media. Thus spamming and flaming may escalate and destroy a newsgroup before intervention, if at all possible, occurs. To prevent disruptive behavior "moderated" newsgroups have been created. In these newsgroups, contributions are forwarded to the moderator, who then decides whether to accept and forward the contribution to the newsgroup as a whole or to reject it. This protects the group against flaming

and spamming. However, this also presents the mediator with a high degree of control, which may not be suitable for all groups.

Sanction mechanisms. Because netiquettes cannot prevent misuse, sanction mechanisms are required. The intent of sanctions is twofold: to immediately curtail the disruptive behavior and to provide a deterrent through example. Social sanctions, such as a verbal reprimand or being referred to the location of posted netiquettes, exist. Sanction mechanisms are mainly mentioned in posted netiquettes for chat rooms (61%) and MUDs (65%) and less often in those for newsgroups (21%) and e-mail (7%). This could be attributed to the fact that disruptive behavior can be more easily detected and addressed in synchronous media. Therefore sanction mechanisms can be much more effective than in asynchronous media.

Technical means, which enable people to individually protect themselves against disruptive people, are available as so called kill or ignore mechanisms in newsgroups as well as in most chat rooms and MUDs. These techniques block messages sent from the offending individual. Many of the netiquettes explicitly recommend the usage of these protection tools.

> If you find yourself being harassed ... you can quickly discourage the activity by clicking on CONFIG and selecting IGNORE for that person. ... Do not use profanities, or abusive language. Chat monitors have the authority to instantly boot an abusive chatter without warning. (Rainforest, 2000)

However, ignore mechanisms do not stop an offender. Stronger sanctions may be applied in chat rooms or MUDs, where the administrators may be permanently online. Administrators may, for example, ban a person permanently (WBS, 1998), thus excluding the offender from any further use of the system. In addition, administrators may be able to immediately delete offensive material (HyperChat, 2000). Depending on the particular virtual community, the administrators have a high degree of power to define the rules and to sanction unwanted behavior (Reid, 1991).

More extensive sanction mechanisms exist in MUDs and MOOs that may be labeled as rude. For example, the administrator, as a deterrent, may attach a note describing the abusive behavior to the abuser's personae or avatar (Reid, 1999). Thus the potential of power gaming may be used a means for an administrator to punish an extremely disruptive player. Thus an abusive act may become a sanction mechanism when it is turned against an offender. The same may happen in asynchronous systems, for example, when newsgroup users collectively agree to intentionally send spam mail to disruptive people, which restricts use of their mailbox. These examples illustrate that disruptive behavior used as punishment against abusive individuals may produce a powerful sanction mechanism.

4. CONCLUSIONS AND OUTLOOK

We have presented an analysis of existing behavioral rules and social conventions documented as netiquettes for both asynchronous (newsgroups, mailing

lists, e-mail) and synchronous (chat rooms, MUDs) communication media. In real-world groups and communities, social conventions provide a framework for the type of relationships and social atmosphere that they want to achieve. The aim of these conventions may be to provide an effective balance between the societal expectation of the community and the interests of individual participants. In our study of virtual environments, we found that netiquettes also seek to achieve this balance.

Although the Internet presents new possibilities for social entertainment and communication, many of the real-world social regulations apply. However, the low level of awareness available makes learning the desirable behavior through observation quite difficult. It is therefore important to learn it from reading the documented netiquettes. Netiquettes aim to facilitate group cohesion and the process of group formation. Following the netiquettes should help a community maintain and achieve its goals. Netiquettes often recommend the application of real-life politeness. They contain some rules that are valid in general; some others are related to the technical medium, or to the specific purpose of the community. Many netiquettes address the multicultural dimension of the Internet. Rules protecting privacy, recognition of one's audience, and comments regarding polite behavior reflect a constructive effort for an Internet environment that reflects an ideal real-world environment.

Major differences between synchronous and asynchronous media occur with respect to the kinds of disruptive behavior that is to be prevented and the availability of sanction mechanisms. Prevention of flaming and spamming are of particular relevance in the netiquettes of asynchronous systems, that is, general netiquettes, as well as in newsgroups and e-mail netiquettes. In chat rooms and MUDs, the creation of new identities may allow gender swapping and may result in social problems in the community. Nevertheless, maintaining anonymity is of high value in many of these communities.

Technical means for sanctions for offensive behavior and for individual protection against known abusers are available in all media. There are more effective means available in synchronous media, that is, chat rooms and MUDs, as administrators are permanently available and may immediately intervene, delete offensive contributions, and even withdraw access to the service. These sanction mechanisms are often announced in the netiquettes.

To summarize, the documented netiquettes provided a narrative about Internet communities and about media-specific differences. Our study provides evidence that the written netiquettes aim to support the community building and maintenance process and to discourage media-specific disruptive behavior. We expect, with the growth of the Internet, the relevance of netiquettes will also increase as a means to support new users' efforts to become respectable community members.

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