In the borderland between family orientation and peer culture: the use of communication technologies among Norwegian tweens

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Abstract
This article explores the use of mediated communication among Norwegian children aged between 10 and 12 years. The analysis is based on a survey and 88 qualitative interviews with 130 children about their use of different types of communication technologies. This allowed a sketch of connections between the nature of the childrens’ social relationships, mediated content and various means of communication employed. Six main content categories of mediated communication were identified. The study points out that new media technologies offer the children new ways of communicating content and meaning which were not easily communicated by children before; both aggressive and
emotionally positive content are exchanged more easily through digital technologies than face-to-face. Above all, the children use communication technologies to build and strengthen relationships for the benefit of their schoolmates and friends. Whether the use of new communication technologies, Short Message Service (SMS) in particular, is accelerating the ongoing process of individualization of the family, is discussed.

Key words
children and young people • communication technologies • content categories • family orientation • individualization • mediated communication • mediated content • peer culture • social relationships • tweens

INTRODUCTION
During the course of the past decade a variety of communication technologies have opened up several new interpersonal communication channels among children (Livingstone, 2002). Communication technologies enable easy and fast communication and social exchanges to be established between people and groups. Mobile phones also facilitate a more nomadic kind of communication, which may challenge traditional social patterns. Ling and Yttri (2005) suggest that teenagers prefer the exclusive individualized access that mobile phones facilitate compared to landline phones, because it provides them with a greater arbitrary freedom to act and new possibilities for peer-group interaction. They also suggest that mobile phones and increased mobility appear to be undermining family rituals. This corresponds with other research suggesting that mobile phones are weakening parental supervision and monitoring of children (e.g. Green, 2001).

However, there may be social and cultural differences in how these new patterns of use of communication technologies are emerging. So far, gender, age, ethnicity, socio-economics and geography have been shown to be central factors in predicting media behaviour, including the use of communication technologies (Heim et al., 2007). The comprehensive pan-European investigation *Children and Their Changing Media Environment* (Livingstone and Bovill, 2001) identified significant differences between the Nordic countries and the rest of Europe concerning the relationship between children and media. Children living in Nordic countries enjoy a well-developed peer culture, in contrast to the more family-oriented cultures of the rest of Europe (Suoninen, 2001). In peer-oriented cultures even younger children have relatively few restrictions on going outside their homes without their parents (Drotner, 2001). This democratization of the family implies a future in which children 'may become actively involved in shaping their families through negotiation and participation in decision-making processes' (Tingstad, 2003: 262–3). Several interesting questions can be derived from these results.
The main aim of this article is to investigate how tweens (10–12-year-old children) in Norway use communication technologies, what kind of content they communicate, and how their use of communication technologies maintains and develops their peer culture and family relationships.

Peer relations and tweens
‘Tweens’ are loosely defined as children around 10–12 years of age, or pre-teens. This study decided to focus on tweens because children’s use of communication technologies in interpersonal relationships grows at around 10–12 years of age (Brandtzæg et al., 2004). Today’s tweens are the first generation to have grown up with online chat and multiplayer online games as part of their everyday life. But what about their peer relations? As children develop and move into adolescence, social relationships become increasingly important, and peer relationships expand to occupy a particularly central role in young people’s lives. New types (e.g. opposite sex, romantic ties) and levels (e.g. ‘crowd’) of peer relationships emerge (Damon, 1983). We know that peer groups play a central role in the transition of their socialization and identity-forming processes, just as their parents do.

However, the children who are tweens, as in this study, are on the threshold of adolescence. They are at that in-between stage – no longer at primary school, but not yet a teen (who are less predictable). Hence, a question to be discussed here is to what extent tweens use new communication technologies as tools to loosen their ties to the family and to reinforce their friendships with their peers – and whether this is done at the expense of their family orientation. This kind of shift in social interaction can trigger parental concern, when children, from a relatively early age, are striving for independence (Ling and Yttri, 2005). Therefore, an important issue is to identify when, or even how early, peer-group orientation actually begins, and whether or not new communication technologies are reinforcing and speeding up this process among tweens.

Mediated social interaction
There are several theories of mediated interpersonal communication. In this section the focus is restricted to two lines of research in a more general sense, as proposed by Berger (2005). The first of these lines is investigating the potential negative effects related to the use of communication technologies, such as addiction and isolation. It holds that technologies are causing people to become socially isolated and cut-off from genuine social relationships (e.g. Kraut et al., 1998; Stoll, 1995). A second line of research is interested in the interactions or relationships that result from using different types of communication technologies. One perspective within this line of research is concerned with the way that reduced social cues in computer-mediated communication (CMC) can lead to a variety of outcomes. The social presence theory, for example, hypothesizes that communication media vary in
their degree of social presence, and that these variations are important in
determining the content of the communication.

Another focus has been on the absence of social cues in mediated
communication (Kiesler and Kraut, 1999). This work argues that the lack of
visual interpersonal information in mediated communication, combined with
attenuated socio-emotional feedback, transforms emotional content.
According to this theory, the absence of feedback and the lack of social and
emotional information have two effects: they inhibit social processes such as
consensus formation, and lead to stronger emotional expressions. Therefore, it
has been argued that the lack of physical closeness in a media environment
makes interpersonal relations with communication technologies less
supportive than face-to-face relationships (Kiesler and Kraut, 1999; Kraut et al.,

The previous section set out a number of possible outcomes related to
social interaction with communication technologies. However, to date, most
research on the use of communication technologies has emphasized
individual access to, and use of, digital content and services. Typically, with
regard to interpersonal communication and relationships, previous research
has focused on organizational communication issues and groups working on
contrived tasks in laboratory settings (Carroll et al., 2001). The focus should
be on ordinary people and, above all, on children, because of the rapid spread
of communication technologies in children’s daily environment. Yet,
interesting research has been done on how and to what extent children and
young people are using communication technologies in communication and
relationships (Cummings et al., 2002; Tingstad, 2003). However, existing
studies of this kind are mostly oriented towards the development of
friendships and interpersonal relationships with regard to one particular kind
of virtual world or technology. It should be noted that children’s social
interaction develops and is maintained via several communication channels.
A more holistic approach to different types of communication, while using
different types of mediated communication tools, is needed.

For some years, media researchers have been asking for studies that
combine qualitative and quantitative methods (Werner, 1998). Few studies
have focused on individual children (Livingstone, 2003; Tingstad, 2003), thus
giving a voice to young users of the new media technologies. The culture
researchers Haun and Heggli put it as follows: ‘There is a demand for
qualitative research with an insider perspective, as young voices appear not to
have been sufficiently heard’ (2002: 13).

METHOD
This article focuses primarily on the qualitative data collected by interviews
with 10–12-year-old children, but this project also included a survey
(Endestad et al., 2004).
Access to and use of new media is widespread in Norway, compared with other countries in western Europe. A questionnaire survey charted access to and usage of new media technologies among schoolchildren between 7 and 12 years of age (second, fifth, sixth and seventh grade). The study took place in October and November 2002. A total of 825 children from six schools in Oslo completed a form covering a wide range of topics. The sample was stratified to match geographical and socio-economic conditions in the city. Of the sample, 51 percent were boys and 49 percent girls, and 16 percent of the sample had a father or a mother from a different country to Norway. The parents of the children in second grade completed a questionnaire which was virtually identical to the one given to the older children. There were approximately the same number of children in all age groups. The response rate was 90 percent.

The survey revealed that the youngest children do not use communication technologies such as chat, email and mobile phones to any great extent. However, by the time that they have reached the age of 10, many of the children have become both internet and mobile phone users. By the age of 10–12, almost half of the children have their own mobile phones. They send an average of 1–2 (1.5) text messages (Short Message Service, SMS) a day. In the same age group, 58 percent use email now and then or often, while 65 percent chat now and then or often, as shown in Figure 1.

A series of 88 guided, but loosely structured, group and individual interviews were performed in 2002 and 2003. The interview candidates consisted of 130 children in the fifth and seventh grades, aged 10 or 12, from six schools in Oslo and the surrounding rural districts, from a variety of social and cultural backgrounds. Most of the children of non-Norwegian ethnic background who took part in the interviews had their cultural origins in Muslim groups, mainly from the Near and Far East, although some of them came from Europe.

In Norway, when it comes to the information given, respondents’ consent and confidentiality, special and detailed precautions must be taken when children under the age of 16 are approached. Neither teachers nor parents were given access to any information provided by the children. Every child was informed that they had the opportunity to stop the interview at any time and were free not to answer questions. In contrast to the survey, the qualitative interviews mainly concentrated on themes related to the content in social interaction that the children themselves preferred to talk about. However, great care was taken by the interviewers not to proceed or push children into sensitive subjects that would need therapeutic feedback from the adults. All the interviews took place in the interviewee’s school environment.
In order to avoid any gender domination in the group interviews, we chose to run sex-segregated group interviews. All the children participated in group interviews of four to eight children. Immediately afterwards, each child had the option to participate in an individual interview. The interviews averaged 45 minutes in length.

The aim of the group interviews was to encourage the children to discuss and share their thoughts about social relationships, modes of communication and emotions. This was concretized by focusing on neutral themes such as leisure activities, doing homework and suchlike, but the children also wanted to discuss more emotional themes such as friendship and flirting, quarrels and harassment. These topics were related to various types of communication with peers, schoolmates and parents, even strangers, and how different types of communication technologies were used in these situations. In the group interviews, questions such as with whom they communicated, the content of the different types of communication used, for what purposes the different communication tools were employed (chat, email, mobile phones, landline...
phones, letters, postcards, notes, etc.) and what kind of social relationships the various communication tools supported, were highlighted. Throughout the group interviews, the children were asked to compare different means of communication with face-to-face communication. In the individual interviews, they were asked to choose one specific media technology with which they were familiar, as a starting point for a dialogue with the interviewer about their actual use of, and experiences with, new media technologies.

The children’s perspective was the point of departure for the qualitative part of the investigation. Especially in the individual interviews, in which they were allowed to take the lead, the children’s stories should give important insight into their lifeworld. In analysing the interviews, a ‘view-from-the-inside’ is applied in an explorative content analysis. In these interviews the children mostly talked about themes with which they were especially preoccupied and wanted to share. The qualitative data demonstrates which topics the tweens chose to talk about, but they do not reveal whether the phenomena mentioned are actually widespread or frequent in a representative way. However, the large number (130) of children interviewed makes it possible to compare their answers in order to identify typical patterns of utterances. All the interviews were audiotaped and then carefully transcribed. N-Vivo, developed from Nudist, was used as an analytical tool.

RESULTS AND DISCUSSION

Content in mediated communication

In order to identify children’s communications in chatrooms, the quantitative part of the investigation asked what children preferred to chat about in terms of different content categories. It turned out that ‘interests or hobbies’ was the activity that involved most of them, as Table 1 shows (Brandtzæg et al., 2004).

The survey shows that chatting about hobbies and interests is most frequent among the children who actually visit chatrooms. Since such conversational themes are neither controversial nor problematic, they were not focused on much by the children in the interviews. In the qualitative part

• Table 1 What children (10–12 years) do or talk about in chatrooms, in percent

<table>
<thead>
<tr>
<th>Activity</th>
<th>Often</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk about interests or hobbies</td>
<td>18</td>
<td>35</td>
<td>47</td>
</tr>
<tr>
<td>Pretend to be someone else</td>
<td>14</td>
<td>29</td>
<td>57</td>
</tr>
<tr>
<td>Things that are difficult to discuss face-to-face</td>
<td>9</td>
<td>23</td>
<td>69</td>
</tr>
<tr>
<td>Flirt with people that I know</td>
<td>9</td>
<td>24</td>
<td>67</td>
</tr>
<tr>
<td>Flirt with strangers</td>
<td>7</td>
<td>19</td>
<td>74</td>
</tr>
<tr>
<td>Discuss computer games</td>
<td>7</td>
<td>26</td>
<td>67</td>
</tr>
<tr>
<td>Chat with friends from other countries</td>
<td>4</td>
<td>18</td>
<td>78</td>
</tr>
</tbody>
</table>
of the study, the point of departure for identifying the content of the children's communication was their own stories about their use of all types of communication technologies, not only chatrooms. Explorative content analysis of the qualitative data revealed that the content of the children's mediated communication could be divided into the following six categories:

1. communication mediating practical information and messages;
2. communication mediating interests and hobbies;
3. communication seeking to establish contact with others;
4. communication with a strong symbolic and/or emotional content;
5. communication with or about the opposite sex; and
6. communication intended as bullying and harassment ('flaming').

The content categories identified in this study reflect the patterns and common topics that emerged in responses dealing with the subject of communication in both the group and single interviews. The reliability of these patterns is based on the study's large number of respondents and interviews, even though they cannot be confirmed by the survey. The identification of these content categories makes it possible to highlight the connection between the mediated content, the actual media technologies used and the nature of the social relationships established by each type of mediated communication. The following section presents typical stories and concrete examples of quotes that emerged from the responses, and discusses how these illuminate the broader question of content categories in children's communication with communication technologies. In addition, this section will discuss whether the patterns that emerge corroborate the findings from other similar studies.

Communication mediating practical information and messages

Interviewer: What would be a nice message to receive, then?
Boy, 12 years old: Well, something like: 'Do you want to go skiing with us today?', or 'Do you want to do this or that, or go to the cinema?' And then you reply 'Many thanks', or something like that.

The children usually communicate this category of content via SMS to their peers and by talking on the mobile phone with their parents. Research points out that young people associate particular phone functions with specific sets of social relationships. According to Green, family relations ‘tend to be associated with voice, whereas the (by far preferred) text messaging was associated with friends’ (Green, 2003: 39). This was also the preferred interaction pattern among the children interviewed here. However, they usually explained these different patterns of communication in financial
terms — they cannot afford to talk much on their mobile phones. Often the only actual talking they do is when they answer a call from a parent or adult. When they contact their peers, the cheap SMS service is preferred. A group of 12-year-old boys held that a mobile phone is a necessary tool to socialize with peers:

Boys: If we want to do something together, we call around and gather the whole lot in order to go sledging or something else. It is very practical to have a mobile phone — without it, you cannot join the crowd.

A practical need for communication on the parents’ part is often their motivation for giving the child a mobile phone. It enables them to check where their children are, while allowing children to negotiate with them about how long they are allowed to stay out with their friends or about where and when they can pick them up.

Practical information and messages form an important category of the content used in interaction between adults and children. Parents use the mobile phone for micro-coordination and supervision in their parental monitoring, while the children use it to keep informed about when and where to meet their friends and schoolmates.

Communication mediating interests and hobbies

Interviewer: What do you chat about then?
Girl: When I chat with my cousin we talk a lot about dancing, music and also when to meet. Every Monday I go dancing, and I wonder if she is coming too.

As described in the introduction, both girls and boys have adopted new media technologies such as the internet to communicate with their peers. They use the internet to communicate about their interests and hobbies. Communication with this type of content takes place partly with friends and schoolmates, even cousins, and is mediated mostly via MSN-type messengers (instant messaging, IM), but also by emails and in chatrooms. Both girls and boys prefer to chat with people whom they already know. A group of 12-year-old boys discussed whether MSN Messenger can be compared to chat. An important difference to them was that, when using MSN Messenger, they know who they are speaking to and can call a friend and talk to them only about a common interest. Therefore, MSN is a more private and individualized type of communication than chatrooms. A 12-year-old boy told us that he chats with both family members and friends about interests and hobbies:

Interviewer: Do you chat with friends?
Boy: Yes, I tell them when I am playing computer games, what types of games I have, and the like.
Interviewer: Are they schoolmates or what?
Boy: Friends from school and cousins and the like.

When they visit public chatrooms on the web, the children also talk to peers about their interests and hobbies, usually anonymously. Mentioning interests and hobbies is one of the standard initial phrases of the big public or open chatrooms that the children visit. As they become more familiar with the internet’s potential, many children prefer to visit special sites where they can chat with like-minded peers about their special interests (e.g. Bjørnstad and Ellingsen, 2002). The boys often chat with other boys about computer games or visit fan sites for popular films such as Lord of the Rings. The girls are interested in visiting sites dedicated to particular movies or pop stars, but they also surf the web for sites about horses or other animals, or sites devoted to some sort of nature interest.

For many of the 10-year-olds, communication which mediates interests and hobbies is still largely mediated via landline phones at home. Usually they do not talk with their peers on the mobile, and the space restrictions of SMS do not give them an opportunity to communicate about interests and hobbies to any extent. Girls in particular report that they can talk for hours with their girlfriends on the family phone in their home. But since these phones are usually placed in ‘public’ areas in the homes, secrets are exchanged in private via the mobile phone. However, it should be noted that many homes now have cordless landline phones. Therefore, these types of phones also provide excellent opportunities for mobility and privacy within the home.

Communication seeking to establish contact with others

Girl, 10 years old: Sometimes Guro and I send messages like, ‘What are you doing?’ to each other. I wouldn’t say ‘What are you doing?’ to your face.
Interviewer: But what would be a typical message you might send, then?
Girl: ‘What are you doing?’ [Laughs] Well, that’s what Guro usually sends to me.

Communication seeking to establish contact is of considerable importance when it comes to building and maintaining peer relationships. This was the category of mediated content most frequently mentioned by the children during the interviews, and usually consists of rather simple messages of the following type: ‘What are you doing?’ ‘How are you?’ and suchlike. This category of content is communicated most often via SMS. To a lesser extent, some children also use MSN Messenger or IM for the same purpose, especially when several of them are logged on simultaneously. Some of the children told us that they try to keep their mobile phones switched on constantly in order to be always accessible to their friends. A group of 12-year-old girls said that
they do not manage to switch off their phones in family settings, even when they are expected to participate wholeheartedly. One of them told us that this can cause conflict in the home:

Girl: If you get a message, you cannot wait. If you are sitting and eating, and have the mobile phone in your pocket and it gives a signal, then you just pick it up, and then the parents look rather sour.
Interviewer: Do you have to look at it immediately?
Girl: Yes!

This story exemplifies the new possibilities for ‘always-on’ peer-group relations given by mobile phones. The findings correspond with those of Ling and Yttri (2005), which showed that adolescents in Norway did not limit their mobile interaction to any special locations or time of the day.

Some of the children interviewed reported that access to SMS has put an end to their previous habit of making fixed agreements with their school-mates about seeing each other after school has finished. Some described how they have stopped walking around ringing doorbells to ask whether the children living in the neighbourhood would like to come out and play.

Divorced parents might use mobile phones to reinforce contact with their child (e.g. Livingstone, 2002). Some of the children reported that the parent who left home gave them their first mobile phone. In addition to exchanging practical information and messages, the parent who has moved away uses a mobile phone to maintain close and more private contact with the child than it is possible to establish through their former spouse’s landline phone. The children might be encouraged to send the absent parent a ritual goodnight message every night. A 10-year-old girl explained to us that she has a mobile phone because her parents are divorced. She sends a lot of messages to her mother:

Interviewer: Do you remember the last message you sent?
Girl: ‘Goodnight, mummy.’ Because mummy says that when I stay with daddy, I should always send her a goodnight message.

Communication with a strong symbolic and/or emotional content

Girl, 10 years old: I got one of those picture messages.
Interviewer: So what was that picture?
Girl: A bear or a dog or something like that, where it also said, ‘I am looking for a friend. Even though I can’t see you, I am thinking about you.’

This type of communication may be regarded as a sort of symbolic gift-giving. Such communication is mediated most commonly via SMS, in the form of ‘digital gifts’ such as pictures or ritualized greetings (Johnsen,
The reciprocal duty to give, receive and give back is recognized by the participants in this form of communication, as in other types of gift-giving systems (Johnsen, 2003). These types of SMS, such as pictures of teddy-bears, roses, ritual ‘goodnight’ greetings and ‘I like you’ messages, show that in this type of communication the factual content is not important; what matters is the social implications. This is also the case with the many birthday cards and letters that the girls make with great effort and then exchange. Girls in particular like to exchange SMS pictures and drawings that are symbolic expressions of close relationships and emotional ties, such as hearts, teddy bears, flowers and suchlike.

Communication with or about the opposite sex

Girls, 12 years old: Yes, yes, there is a lot of flirting [laughter].
Interviewer: What is SMS flirting like, then?
Girls: ‘Hi, I like you.’

Boys, 12 years old: You dare to say more by SMS than on the phone.
Interviewer: Do you really?
Boys: It’s most embarrassing face-to-face, followed by ringing up and then SMS, which is least embarrassing.

SMS has given the children a greater opportunity to exchange love messages than other communication technologies. In a study by Skog and Jamtoy (2002) of SMS use among young people, one-third of the participants reported that they had made new friends through their use of SMS. This corresponds with the finding of this study, where both girls and boys made a point of the fact that it is much easier to get a sweetheart when they communicate by mobile phone than face-to-face. The reduction in social cues and social constraints in a media environment may facilitate social contact. Boys in particular are found to be better able to flirt and express feelings via both chat and SMS (Bjørnstad and Ellingsen, 2002).

However, there is a wide range of sexual communication among children. Many of the boys report that they use SMS to pass around pornographic pictures, often animated, which they often send to girls, especially a classmate whom they might pick out as a victim. The girls complain about this. Even though they may be flattered to receive attention from the boys, most of them strongly dislike the pornographic content of this type of communication. The mobile phone makes it possible for boys to pass pornographic pictures and obscene animations directly to girls, anonymously if they prefer.

In the public chatrooms, which are visited most often by the youngest of these children, much talk concerns sex and pornographic expressions (e.g. Bjørnstad and Ellingsen, 2002; Tingstad, 2003). Some of the children we
interviewed reported that they have experienced this. On the one hand, in the interviews almost all of the girls aged 10 who actually used the internet for chatting, and most of the girls aged 12, said that they find such obscene sex-related chat stupid, nauseating and disgusting, and that they usually leave the chatroom immediately if they become involved in such talk. They also told us stories about being frightened when they happened to visit hard porn sites unintentionally. Most of the girls of this age group seemed to be too young to participate in any kind of advanced sex chat on the net, even though they visited sites where this type of content is rather common.

On the other hand, the boys of this age group often use the internet to investigate sexuality by surfing porn and to test out a sort of virtual sexual praxis on the net. For many children and young people, chatrooms are an identity playground in which identity is something created, tried out, negotiated and changed (Tapscott, 1998; Tingstad, 2003; Turkle, 1995). Many of the boys said that they often pretend to be girls when they are in the chatrooms. Computer cross-dressing or gender-swapping (Turkle, 1995) is a well-known phenomenon among young people in Norway which has been observed in other studies (Stuedahl, 1999; Tingstad, 2003). This suggests that part of the crudest sex chat on public websites is actually between boys – boys who are pretending to be girls and boys who really are boys. Certainly, a few of the 12-year-old girls said that they chat with boys they meet on the internet about sex, but often chat with this category of content appears to function as an arena of virtual experience for the pornographic interests of the youngest boys rather than a meeting place for girls and boys aged 10–12.

Communication intended as bullying and harassment

Interviewer: But why do you send such [very nasty] messages to the girls, then?
Boys, 10 years old: Because they’re bad. They’re horrible. Many of them call me ‘meathead’, after all.
Interviewer: But why do you call them such things?
Boys: Because it’s fun. Because we get nasty things back.
Interviewer: Is this bullying, or what is it?
Boys: No, it’s a game. A game with bad words. We call it word-games. Just a fine word-game.

Children may have a lower social threshold for subjects chosen in interpersonal communication when they are online than when they talk face-to-face (e.g. LaRose and Eastin, 2003). As described in the introduction, the social information processing theory is an effort to explain differences in the outcome produced by face-to-face and CMC (Walther, 1992). Given the possibility of anonymity offered by the new media technologies, or at least
the possibility not to communicate face-to-face, some of the children choose to communicate in a way that could be characterized as harassment or badgering (e.g. Holm Sørensen et al., 2000), and, more rarely, as systematic bullying. For example, the girls said that they call each other words such as ‘cow’ and ‘bitch’ when using SMS. Harassment takes place in public chatrooms (Bjørnstad and Ellingsen, 2002), sometimes on SMS and on notes during lessons in school. Some of the boys said that they stick together and badger others on public chat channels.

It is often difficult to draw the line between harassment and bullying, but most of the incidents reported could be labelled harassment rather than systematic mobbing. In this study there was an obvious reluctance to give such kinds of activities the label ‘bullying’. Some of these activities obviously had the function of strengthening peer relationships within the group of offenders.

Gendered content of communication

Girls are said to be more likely to use mobile phones and SMS than boys (Drotner, 2001; Skog, 2002). In addition, girls have been found to be more frequent users of communication technologies for social activities such as chat and emailing (Wartella et al., 2000). However, the analysis here shows that most of these various categories of communication mediated by the different types of media technologies are used by both girls and boys alike. But when it comes to the pictures and symbols that they exchange, the gender differences are striking. The girls in general prefer pictures and symbolic drawings expressing close and devoted relationships. Symbols such as hearts, flowers, rings and suchlike are intended to strengthen the emotions that support friendships, sometimes even love, but also family relationships. The boys also pass around such symbols, but to a much lesser extent. On the contrary, many of them prefer to pass on pornographic and obscene pictures and symbols.

This differentiated, gendered content of communication could be analyzed by various theories of mediated interpersonal communication. A hyperpersonal model might be used to explain the positive consequences of the reduction of social cues, as is the case with much of the girls’ communication. Walther (1992, 1996) argued that in some situations, relationships mediated by cue-lean media could be more engaging or ‘hyperpersonal’ in comparison with parallel face-to-face relationships. However, the SIDE model (Reicher et al., 1995) might be helpful to explain some other findings, especially the boys’ aggressive behaviour. The SIDE model suggests that anonymity of the group to the self and anonymity of the self to the group differ in their effect on group members’ perception of the group and their adherence to in-group norms. Anonymity of the group to the self is believed to create the perception of the group-as-unity and
therefore adherence to in-group norms. Thus, CMC does not always lead to anti-normative behaviour; it can enhance group identities and the norms of these groups.

In any case, even in face-to-face situations, the content of the communication might be gendered and rather aggressive. Some of the girls reported that when a teacher is not present, the boys might download very rude pornographic pictures from the internet and pass them around in class. Using their own mobile phones and the internet without adult supervision, the boys have access to new media technologies which they might use to offend the bashfulness and integrity of the girls. Therefore, girls are exposed to sexual harassment when they are still very young, and their chances of protecting themselves from these offences are relatively small compared to those of girls of previous generations, who could not be reached anonymously by SMS or the internet.

Communication technologies and social relations

The main finding of the interview analysis was that for many tweens, the most important communication technology apart from face-to-face is SMS, even though chat is important, especially MSN Messenger (a type of IM). Many other media are employed also, some of which have rather specialized functions while others are functionally equivalent to other media, as is the case with letters written on paper and email. The social relationships that were seen to be nourished or established by the children by means of the different types of media technologies could be categorized into three types: family relationships, peer relationships and relationships with strangers (the latter sometimes turning into friendships). The following section outlines some important relations between the nature of the children’s social relationships, the mediated content and the various communication tools used.

Face-to-face communication and old-fashioned notes

Of course, communication face-to-face is absolutely the most important way of developing social relationships. The children talk face-to-face with family and friends about all kinds of subjects, but also to a limited extent with strangers. But they are more restrictive about directly communicating highly emotional content such as expressions of love or secrets, or openly mobbing or harassing their peers face-to-face.

In school, the use of mobile phones is usually restricted or forbidden. However, as they always have done, the children communicate with their schoolmates in the classroom by sending notes. The notes often comment on the teaching, and thus have the function of reinforcing relationships among classmates and creating distance from the teacher and the activities that are taking place in the classroom. Notes are also used for flirting and to send love messages. In general notes are regarded as a rather risky type of
communication because teachers often punish children who send them by intercepting the notes and reading them aloud to their classmates.

**Chat as a socializing activity**

Public chatrooms are used to strengthen the children’s peer culture when they are sitting together in someone’s home chatting on the internet, as some of them do. Some of the girls revealed that there might be two or more girls together on a chatline, sharing the alias of a virtual personality they had constructed in common, which even might be equipped with her own email address. The boys also get together on the internet in order to chat. Some told us that they gather to go online as a gang to test the rules of a site in order to see how far they can go in bullying others. On the chat sites they were meeting boys from other local areas and having some kind of virtual gang fight before they were kicked out of the chatroom.

**Chat and ethnic variations**

The individual interviews revealed that for many of the children of non-Norwegian ethnic backgrounds, especially those with Muslim parents, the use of public chatrooms may have the opposite function than to strengthening peer culture. It is precisely the strong family orientation of many immigrant families which might explain why girls of 10 years are allowed to visit public chatrooms while their parents are trying to prevent them from having a mobile phone. These girls reported that they visit public chatrooms where they meet children and young people from their parent’s home country. This type of chatroom communication is not regarded as undesirable by the parents. It binds their children to their cultural background, helps to maintain their segregation from Western society and strengthens the family orientation of the child.

**MSN Messenger and peer relations**

MSN Messenger is a type of communication that was used almost exclusively to strengthen the peer culture of the children who were interviewed. It becomes increasingly socially important for children as they get older. Once they have built up some skill in using the internet, many of the children reported that they preferred to leave public chatrooms and to use MSN Messenger to communicate with their peers instead of talking to strangers. MSN is used to communicate with people that the child has in their contacts list, which mainly includes friends and schoolmates, but seldom family members.

**Email supports a variety of relationships**

Communication by email turned out to support a differentiated range of social relations among the children interviewed. Email might be used to strengthen the children’s peer culture, when they send each other electronic letters, much
like a more traditional letter on paper. Some emails exchanged among the children were functionally equivalent to postcards, birthday cards, Christmas cards and suchlike. But the children also used email to correspond with family members. Communication with grandparents often took place via this medium. Some children of immigrant families reported that their family had only one single email address. These families above all use email to keep in touch with family and relatives in their home countries.

Mobile phones, individualization and parental control
The individualization of the mobile phone is due to the private character of the medium. According to Livingstone (2003), there is no doubt that this technology has had the most revolutionary effect in promoting individualization and privatization among children, when their family orientation is considered. Since Norwegian family members are living ever more separate and parallel lives within the framework of the family, the mobile phone as a communication tool has become very important for young people to establish and nourish peer relationships outside the sphere of their families.

According to Ling and Yttri (2002), the use of mobile phones among young people might lead to problematic situations, since it reduces parental control over children and thus changes social interaction within the family. This development was most evident in this study’s interviews with some of the girls of non-Norwegian ethnic background, especially from the Near East. They claimed that their parents dislike the mobile phone because it supports private communication. Some of the 10-year-old girls reported that their parents explicitly warn them that ‘the mobile phone is dangerous to Muslim girls’. This situation reflects a tension between family orientation and peer-group orientation, which may be even harder in cultures largely oriented to the family. Some of the immigrant girls described a lasting and very intense fight with their parents on this issue. The result is that as far as this age group is concerned, there is currently a digital divide in Norway. The 10 to 12-year-old girls from immigrant Muslim families report that they get mobile phones later than their peers of ethnic Norwegian origin. These ethnic differences were not confirmed by the survey, and are probably not statistically significant. But for the individual girls that were interviewed, these ethnic differences were, no doubt, of great concern.

Virtually 100 percent of Norwegian adolescents aged 16 years own their own mobile phone (Vaage, 2003). Discussions between parents and children in Norway do not concern whether the child may have a mobile phone, but when they are allowed to have it.

Communication technologies and family relations
The remaining question to be discussed is: do tweens actually use new media technologies to strengthen relationships with their peers at the expense of
their family orientation? It is a fact that mobile phones can give parents more control and better knowledge of where their children are. Contact with divorced parents in particular might be increased by the use of new technologies. Also, it could be argued that since children make appointments by SMS instead of walking around to their friends’ houses, this does not strengthen their contact with peers. In spite of these contradictory tendencies, this study demonstrates that among Norwegian tweens, communication technologies, particularly the mobile phone, assist in peer-group bonding and in weakening their family orientation. Today, children have tools which enable them to break all restrictions on their communication with their peers in more flexible and nomadic settings. The pattern of this tendency became quite obvious during the interview analysis. A significant example from this study is a 10-year-old boy who explained that he really needed to have a mobile phone of his own in order to keep in touch with his friends when he was going on a camping trip with his father during his summer holidays.

It was a general pattern in the interviews that children reported frequent texting with peers, not only during the summer holidays, but even during other holidays and more typical family gatherings such as Christmas Eve and New Year’s Eve. These occasions are traditional, family-oriented situations where children are expected to take part in a rather closed circle made up of family and kin. But under these circumstances, the children use their mobile phones to keep in touch with their friends and schoolmates, that was only possible to a very limited extent a few years ago.

CONCLUSION
According to Tyler (2002), several studies give us reason to doubt whether new communication tools have changed the nature of interpersonal and group relationships to any great extent. This study finds, on the contrary, that new technologies are used by the interviewed tweens to change their social relationships. The children use communication technologies above all to build and strengthen relationships for the benefit of their schoolmates and friends. Tweens adapt their communication behaviours to make the most of whatever medium they are using during an interaction. The communication technologies facilitate their communication at any time, anywhere and in an individualized and private way. These technologies are used for a variety of purposes, as indicated in the six different content categories previously described.

The analysis of the qualitative interviews revealed that the boys tended towards playing out the rather nasty and aggressive sides of their identities, while the girls tended towards communicating close and devoted relationships. Overall, the study makes it quite clear that new media technologies offer tweens new opportunities for communicating content to their peers which were not so easily communicated between 10 to 12-year-old
children previously. This is especially true of communication which mediates emotional content. Thus the feeling of anonymity using communication technologies is not just a facilitator of being frank, open and trustworthy; it may also influence a more negative outcome in terms of aggression and hostility or ‘flaming’. Therefore, this study’s conclusion is that communication between tweens has become less restrained than it used to be. This is fully in accordance with social information-processing theory (Walther, 1992).

Another related question is whether or not new communication technologies reinforce and speed up the ongoing process of individualization of the family among tweens. Such suggestions have arisen from the empirical results of other research on teenagers’ mobile phone usage (e.g. Green, 2001; Ling and Ytrri, 2005). In comparison with children’s use of communication technologies a decade ago, even the very young children of today have almost unlimited access to private communication channels. The present study shows that clearly, this new ‘always-on’ situation was used by the tweens to support communication with their peers in social situations which were dominated by the family and were obviously family-oriented. While parents’ motivation for giving their children mobile phones is often to strengthen parental control, the tweens in turn quickly use this and other communication tools to build and strengthen relationships with their peers. To conclude: via the mobile phone, and to some extent the internet, tweens are able to keep in continuous contact with their own friends even if they are in the midst of a family setting. New communication technologies offer good conditions for developing children’s peer culture, while the family-oriented culture has become weakened by the abovementioned processes of the individualization of the family.

The date of the findings in this study is from 2002–03. However, the spread and use of new communication technologies is continuing also in the fast lane among younger age groups. For example, the development of Multimedia Messages Services (MMS) in new mobile phones is already offering a new mode of communication which will probably change much of the content production in inter-peer communication. Future research should update these findings. In addition, future research should investigate the questions of peer orientation and family relationships among children younger than 10 years. Nowadays, children in the UK are said to get their first mobile phone at the age of eight, which corresponds to the Norwegian figure for 2005.

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