Computer-mediated communication in adolescents with and without a history of specific language impairment (SLI)

Kevin Durkin [a,*], Gina Conti-Ramsden [b], Allan J. Walker [a]

[a] Department of Psychology, University of Strathclyde, Graham Hills Building, 40, George Street, Glasgow G1 1QE, UK
[b] Human Communication and Deafness (HCD), School of Psychological Sciences, The University of Manchester,
Ellen Wilkinson Building (formerly Humanities Devas St.), Oxford Road, Manchester M13 9PL, UK

ARTICLE INFO

ABSTRACT

The various uses of computer-mediated communication (CMC) are transforming the nature of social interactions and human relations among adolescents. Little is known about engagement of exceptional youth with this technology. The present study investigated the implications of language and social factors for frequency of CMC use and its relationship to adolescent well-being in young people with and without a history of specific language impairment (SLI). Eighty six adolescents with a history of SLI and 90 typically developing 17 year olds participated. Participants completed standardized assessments of psycholinguistic abilities and self-report measures of language motivations and social motivations for CMC use, as well as anxiety and depression. Results indicate that language abilities have a complex relationship with frequency of CMC use; social abilities have a more direct association and are predictive of frequency of CMC use. Both adolescents with SLI and typically developing adolescents were less shy online. No association was obtained between frequency of CMC use and reported emotional symptoms of anxiety and/or depression. It is argued that the characteristics of CMC, in terms of its less stringent language demands and its reduced-cues environment, can provide a medium for positive adaptation of adolescents with communication challenges.

1. Introduction

Computer-mediated communication (CMC) via the Internet is widely available and very popular with the young (Livingstone & Bober, 2005; Roberts & Foehr, 2008). Findings from the Pew Internet and American Life Project (Lenhart, Madden, & Hitlin, 2005) indicate that 87% of all youth between 12 and 17 years use computers, in particular the Internet. This figure is similar in Europe (83% of 16- to 17-year-olds, Eurobarometer, 2004). CMC use seems to be equally popular with both sexes (Sussman & Tyson, 2000; Whitley, 1997). Interpersonal contact and everyday social arrangements among teenagers are now routinely effected by CMC via the use of e-mail, instant messaging services, online game play, and similar media (Barak & Sadovsky, 2008; Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; Bryant, Sanders-Jackson, & Smallwood, 2006; Lenhart, Arafeh, Smith, & Rankin Macgill, 2008a,b; Subrahmanyam & Greenfield, 2008).

The various uses of CMC are transforming the nature of social interactions and human relations, particularly among adolescents. Over 75% of young people's online interactions serve interpersonal functions (Baym, Zhang, & Lin, 2004; Gross, 2004). However, the effects are not unidirectional, i.e., technology affecting individuals, but interactive. Intrapersonal and contextual forces are likely to interact with communication technologies in complex ways (Barak & Suler, 2008; Hardy & Scheufele, 2005). Theoretical accounts of CMC suggest a number of intrapersonal factors that may affect young people's use of CMC, in particular cognitive and perceptual abilities, motivation and specific skills (Barak & Sadovsky, 2008; Spitzberg, 2006). In this study, we are particularly interested in examining two clusters of potential influences on frequency of CMC use: language and social abilities. We compared frequency of use by adolescents with and without a history of specific language impairment (SLI). Participants completed interviews and kept a diary of their uses of CMC. We measured language and social abilities and motivations, and adolescent well-being.

1.1. Language and CMC use in adolescence

Language abilities have received little attention in relation to CMC use, although research on the role of language-related abilities in new media use is emerging (Barak & Sadovsky, 2008; Durkin, Conti-Ramsden, Walker, & Simkin, 2009; Plester, Wood, & Joshi, 2009). For example, Barak and Sadovsky found that

adolescents with hearing impairments used the Internet more intensively than did peers with normal hearing, and this was the case for both personal and group communication. Working with adolescents with language impairments, Durkin and colleagues found that adolescents who used educational new media less often had poorer language and literacy skills. Plester et al. found, among typically developing adolescents, that those who used 'textisms' (abbreviations and modified vocabulary in text messages) had higher literacy skills.

Young people with SLI have deficits in language learning and use that cannot be explained by factors such as low nonverbal IQ, hearing impairment or neurobiological damage (Leonard, 1998). Comparing their use of new media with that of typically developing peers allows us to investigate the role of language-related abilities in two respects. First, it can tell us about the implications of having language impairments for the ways in which young people respond to new interpersonal opportunities provided by CMC. Second, it provides a distinctive comparison by which to enrich our evidence base concerning the role of language in CMC use among typically developing young people.

SLI has been estimated to affect 7.4% of children at school entry age (Tomblin et al., 1997). Whilst much research has detailed the effects and consequences in childhood, it is becoming increasingly apparent that the effects of SLI extend through adolescence and into adulthood and that a substantial proportion of children have persisting difficulties in a wide range of areas of functioning (Clegg, Hollis, Mawhood, & Rutter, 2005; Conti-Ramsden & Botting, 2008; Conti-Ramsden, Durkin, Simkin, & Knox, 2008; Durkin & Conti-Ramsden, 2007).

There are several reasons to expect that young people with linguistic impairments would be disadvantaged in the face of language-dependent modes of communication and interaction. Young people with SLI have difficulties with oral language; expressing their ideas and understanding the ideas of others (Leonard et al., 2007; Montgomery, 2006; Wetherell, Botting, & Conti-Ramsden, 2007). They also have difficulties in the production (Dockrell, Lindsay, Connelly, & Mackie, 2007; Mackie & Dockrell, 2004) and comprehension of written text (Bishop & Clarkson, 2003; Snowling, Bishop, & Stothard, 2000). Although CMC is evolving as a multimedia environment, the majority of interpersonal communication is text-dependent (Barak & Suler, 2008). Recent findings reveal that 85% of adolescents aged 12–17 engage at least occasionally in some form of written electronic personal communication, such as sending email, text messaging, instant messages, or posting comments on social networking sites (Lenhart et al., 2008a). Thus, the language- and literacy-based nature of much CMC raises the prospects that it could be a particularly challenging environment for young people with SLI.

There are, however, also compelling reasons to expect that CMC use could be appealing to young people with language difficulties. Not all linguistic requirements of CMC are necessarily stringent. For example, in peer-oriented uses of CMC, the rules of spelling and grammar appear to be considerably relaxed, internet talk is informal, and expressive mistakes are tolerated (Livingstone & Bovill, 2001; Plester et al., 2009; Volckaert-Legrier, Bernicot, & Bert-Erboul, 2009). Some forms of CMC, such as e-mail, allow for asynchronous, editable forms of interaction, which can offer young people with SLI more time to think, write, and re-write (edit) language (Madell & Muncer, 2007). In this respect, while language and literacy skills are certainly fundamental to CMC, they may not be as arduous as some more traditional modes of interaction for adolescents with SLI. Barak and Sadovsky (2008) argue that the communication-related characteristics of the Internet mean that it provides a special opportunity for people with disabilities that would otherwise impede interpersonal interactions; their findings indicate that this is the case for adolescents with hearing impair-

ments. Part of the purpose of this study was to investigate whether adolescents with SLI avoid or use the interpersonal communication facilities afforded by the Internet, and whether language factors can help explain their uptake.

1.2. Social factors and CMC use in adolescence

In contrast to language, social factors have been examined more extensively with regard to CMC use. Generally, young people appear to be socially motivated to use CMC as they perceive a number of benefits and gratifications (Barak & Sadovsky, 2008; Chou & Peng, 2007; Gross, 2004; Hunter & Allen, 1992; Livingstone & Bober, 2005). Among some adolescents with disabilities, electronic communication may be especially attractive. For example, Barak and Sadovsky obtained evidence that adolescents with hearing impairment found their disability less constraining in social interactions via the Internet, and hence were strongly motivated to use it as a medium of communication.

With respect to social factors, theoretical and empirical bases for predictions concerning young people with SLI again are somewhat mixed. On the one hand, social relations are another area of difficulty for these young people. Children with SLI tend to be less socially accepted and have fewer friends than do other children (Brinton & Fujiki, 2002; Rice, 1993). As a group, they tend to score higher on measures of shyness and reticence (Hart, Fujiki, Brinton, & Hart, 2004; Wadman, Durkin, & Conti-Ramsden, 2008). They are also more likely to be socially excluded (Savage, 2005). By early adolescence, they tend to have negative self-perceptions with respect to their own social competence (Jerome, Fujiki, Brinton, & James, 2002; Lindsay, Dockrell, & Mackie, 2008). In mid-adolescence, they are less likely than typically developing peers to have close friends and they report poorer friendship quality (Durkin & Conti-Ramsden, 2007).

On the other hand, difficulties with peer relations do not necessarily mean that adolescents with SLI have no desire to interact with peers. Although young people with SLI tend to be less skilled in interpersonal contact, they do seek to relate to other youth, they can be socially motivated, and many achieve satisfactory levels of friendship (Durkin & Conti-Ramsden, 2007; Wadman et al., 2008). One theoretical model of the relationship between social development and language ability (Redmond & Rice, 1998) holds that individuals with SLI develop negative adaptive social behaviours as a result of their difficulties with language in social situations. Some individuals with SLI may become withdrawn or less sociable in adolescence, given their experiences earlier in development. These processes are dependent not on fixed psychosocial deficits but on how the child deals with the communicative demands of different situations and the reactions of others. Different situations and modes of interaction make different demands – and offer different opportunities. Use of CMC may be one source of such opportunities, and it could provide a context for positive adaptation (Barak & Sadovsky, 2008). Hence, a second purpose of this study was to investigate whether social factors contribute positively or negatively to the uses of CMC by adolescents with SLI.

The higher levels of shyness among young people with SLI present another reason why CMC may be attractive to them for interpersonal purposes. Research with people suffering from shyness and social anxiety shows that online communication can be actively sought and experienced as beneficial (Caplan, 2003; Davis, 2001; Stritzke, Nguyen, & Durkin, 2004; Valkenburg, Schouten, & Peter, 2005). In particular, people who find face-to-face interaction uncomfortable or threatening may be drawn to CMC because it offers anonymity and social distance, or at least reduces the availability of unwelcome cues and negative evaluative feedback, such as nonverbal reactions (Saunders & Chester, 2008; Stritzke et al.,