The social brain hypothesis and technology: Does using computer-mediated communication relax the constraints on social network size?

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Introduction
The social brain hypothesis predicts that social network size in humans is limited by both time and cognitive constraints.

These constraints arise partly because frequent, time-consuming communication is needed to build and maintain emotionally close relationships.

New forms of technology (mobile phones, communication over the internet) make it easier and cheaper to communicate with others.

Can new forms of technology therefore relax the constraints on social network size?

Some theories suggest that people can adapt their communication style to new forms of text-based communication, and that these modes of communication can thus help build close social relationships.

Other theories, however, argue that the exchange of both verbal and non-verbal cues is crucial in building close relationships.

This study examined these competing theories. We tested two hypotheses and predicted that:
1) Levels of happiness associated with an interaction would be higher in richer modes of communication.
2) People would be more likely to laugh when using richer modes of communication.

Methods
41 participants each identified 5 network members (family, friends, romantic partners).

The participants completed a daily contact diary for 14 days, detailing the contact with each network member over six modes of communication:
- Face-to-face
- Skype
- Phone
- Instant messaging (IM)
- Text messaging
- Email/Social Network Sites (SNS)

For each interaction, they recorded:
1) How happy the felt following the interaction (0-10 scale).
2) Whether or not they laughed during the interaction (yes/no).

Real laugh was recorded for face-to-face, Skype and phone, symbolic laughter (e.g. 😄) was recorded for IM, texts and email/SNS.

Results

Happiness

Happiness ratings following the interaction significantly varied across the six communication modes, (one-way repeated measures ANOVA, F(3.14, 53.42) = 5.01, p = 0.003, partial η2 = .23).

Paired-sample t-tests (with Bonferroni correction) demonstrated that happiness ratings were not significantly different between face-to-face and Skype.

Happiness ratings were significantly higher for face-to-face, as compared phone, IM, text and email/SNS. Happiness ratings were also significantly higher for Skype, as compared to phone, IM and email/SNS (all p < 0.0003).

Laughter

Levels of laughter varied significantly across the six communication modes, F(5, 85) = 34.18, p < .001, partial η2 = .67.

There was no significant difference in levels of laughter between face-to-face and Skype.

There was significantly more laughter face-to-face and with Skype, as compared to phone, IM and email/SNS (all p < 0.0033).

Discussion
Participants rated themselves as happier, and laughed more, when interacting face-to-face or via Skype, as compared to on the phone, IM, text or email/SNS.

Modes of communication which allow for the exchange of both verbal and non-verbal cues (face-to-face and Skype) may therefore be better suited to building and maintaining emotionally close relationships than those which lack these cues (phone, IM, text, email/SNS).

Laughter elicits positive effect in others and facilitates cooperation and bonding. It also releases endorphins, which are associated with feelings of well-being and relaxation.

Thus modes of communication that are effective at eliciting laughter may result in a greater release of endorphins, thus providing a neurochemical underpinning to building close social relationships.

Social network sites such as Facebook have grown rapidly in popularity in the last decade.

However, this research suggests that use of Facebook for text-based communication may not be effective at lifting the evolutionary constraints on social network size.

Conclusion
New forms of communication technology may facilitate only limited social bonding, in comparison to face-to-face and Skype communication.

Therefore these new forms of communication may not be effective at relaxing the evolutionary constraints on social network size.

Further information
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This paper examined predictors of happiness within communication modes and showed that the duration of interaction predicted happiness only for face-to-face interaction.

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References


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