Adaptivity in health communication

Thematic Section
Adaptivity in Health Communication

Guest Editors' Introduction

The papers in this thematic section constitute a representative sample of theoretical work on adaptivity in health communication produced in the context of the doctoral school on Communication and Health, jointly involving the Universities of Lugano (Institute of Communication and Health, Centre for Organizational Research), Fribourg (Department of Psychology), Neuchâtel (Institute of Work and Organizational Psychology), Zurich (Institute of Mass Communication and Media Effects) and Virginia Tech University, USA (Marketing Department). This doctoral school has operated from 2008 to 2011 and was funded by the Swiss National Science Foundation in the context of the ProDoc program. Much of the research conducted has related to the topic of adapting health communication, thus we solicited relevant theoretical work from the PhD students. The results of their papers are presented here. The papers are partly issued from presentations given at the program's final conference, which took place in September of 2011, while others are contributions solicited by several leading researchers in the field of health communication. The topic of adaptivity will be explored in greater detail with the second generation of the doctoral school, titled Adaptivity in Communication and Health, which is also funded by the SNSF and will run from 2011 to 2014.

Adaptivity refers to any attempt to adapt messages or goals to a target audience in order to achieve particular ends. In the context of health communication, adaptivity has been investigated in the form of tailoring and targeting health messages to specific audiences and by way of physician-patient interaction. Tailoring usually refers to the adaptation of communication to an individual recipient, while targeting refers to adaption to a group (usually a social category such as the elderly or persons living with HIV; Campbell 2008; Kreuter et al. 2000). In the physician-patient interaction, adaptivity is an important element of patient-centered communication. Patient-centered communication includes taking the patient's

perspective and thus the *adaptivity of the caretakers' communication* to the particularities of patients.

Tailoring and targeting are used almost exclusively in relation to communication that aims at behavior change (Campbell & Quintiliani 2006) in the field of health and in other settings. Examples include nutritive behavior, participation in cancer screening tests, smoking cessation, and physical exercise. Related to tailoring and targeting is the concept of personalizing communication, e.g., the use of elements such as addressees' names, especially in personalized letters. One of the more basic forms of targeting is audience segmentation in health awareness or behavioral campaigns (see e.g., Hornik & Ramirez 1999). Another related concept is message framing, that is the conscious choice of a particular argumentation style, a particular angle or frame in the construction of messages, for instance as informed by prospect theory (Tversky & Kahneman 1981). Framing that is done differently for different groups can be considered a precursor of group targeting (Schneider 2006).

The effectiveness of tailoring and targeting in comparison to no communication as well as to non-tailored or non-targeted (often called generic) health communication has been clearly shown, although effects are not universal, and are sometimes quite small and short-term (see Brug et al. 2003; Kroeze, Werkman & Brug 2006; Skinner et al. 1999 for reviews and meta-analyses). For instance, tailored information seems to be more effective with communication aiming at nutritive behavior change than with attempts to make people exercise more (Kroeze, Werkman & Brug 2006). Along with demonstrating effects, hopes to improve health communication and change health behavior have been associated with targeting and its potential, but there have also been fears about misuse of this potential in marketing and other fields (Orleans 1999).

Another significant area that benefits from a new focus on adaptivity is doctor-patient interaction. Adapting a doctor's communication to the needs and expectations of the patient (the essence of patient-centered communication) is very useful. As an example, patients are more satisfied with their physicians when the communication style a physician adopted was congruent with the physician communication style desired by the patient (Krupat, Yeager & Putnam 2000). And research clearly demonstrates that a patient-centered communication style is beneficial for the

patient as well as for the caretaker (Bensing 1991; Robinson 2006; Roter et al. 2006).

However, adaptivity in the doctor-patient interaction can also mean that health care professionals adapt their communication style using all sorts of sociodemographic, cultural, behavioral and other cues, stereotypes and cognitive schemata. Lobb et al. (2002), for instance, showed that a diagnosis of breast cancer patients' age, education and occupation affected counselors' behavior in cancer genetics counseling, while psychological factors and patient's expectations had less impact. These forms of adaptation, however, are often criticized as dysfunctional because they create, perpetuate and reinforce health discrepancies between cultural or racial groups. As a remedy, cultural competence training is often suggested, which can help make health care providers' habits of adaptation less biased and more functional (for an overview, see Perloff et al. 2006).

Tailoring, targeting and adaptivity can focus on different *realms* like sociodemographics such as age, gender, education, psychological variables such as character traits, behavioral variables such as substance abuse or nutritive behavior, health status, health risk aspects other than behavioral such as family history, or situational aspects such as a recent cancer diagnosis, or any combination thereof (Rakowski 1999). Moreover, optimizing communication by adaptivity processes can also be applied to the person who is addressed (the target), or to the aim or goal of the communicator. Different goals such as increasing participation in cancer screening, abstaining from smoking or raising awareness of healthy dieting may well require different communication devices. Optimizing devices in this respect is also an aspect of adaptivity. Adaptivity can be studied in two different *modes:* as a more or less automatic aspect of everyday communication (i.e., something everyone does without much thinking in everyday life to achieve his or her communicative goals, Clark 1996) and as the conscious and planned improvement of communication. The two modes cannot be categorically separated; they are rather endpoints of a continuum. Finally, adaptivity can be studied in relation to two basic types of *communicators:* machines (e.g., computer-generated tailored or targeted messages or reminders) and human beings. Mostly, tailoring and targeting refers to computer-generated communication only (e.g., Kreuter

et al. 2000), but both concepts are also used in reference to human communication (e.g., Lobb et al. 2002). Realms, modes, and communicators can be combined in various ways, except that computer-generated communication is always in the conscious/planned mode as algorithms have to be programmed before such communication can take place.

The purpose of tailoring communication is best summarized by Kreuter et al.:

> The rationale for using tailored communication follows from [Petty & Cacioppo's (1981) elaboration likelihood model] and can be summarized as a five-part logic sequence: (a) by tailoring materials, superfluous information is eliminated; (b) the information that remains is more personally relevant to the recipient; (c) people pay more attention to information they perceive to be personally relevant; (d) information that is attended to is more likely to have an effect than that which is not; and (e) when attended to, information that addresses the unique needs of a person will be useful in helping them become and stay motivated, acquire new skills, and enact and sustain desired life-style changes. (Kreuter, Strecher & Glassman 1999: 278)

Early tailoring affects research focused on assessing its global effect. More recent work has moved to study, mostly with help of experimental manipulation, the effects of specific aspects of tailoring such as source variations (e.g., Kreuter & Haughton 2006). The variation of sources in studies on the effects of tailored communication revives issues that were addressed in the 1950s period of classical persuasion research such as Hovland and successors' work on source credibility (e.g., Hovland & Weiss 1951) and places them back on the scholarly agenda. It also highlights the fact that adaptivity research raises very general issues in communication research and sheds new light on them. A third research tradition combines the effects of tailoring and other individual intervention modalities such as telephone counseling (for examples see Campbell & Quintiliani 2006).

The critical decision in tailoring and targeting messages is of relevance: it has to be decided which variables make a difference (Campbell 2008; Rakowski 1999). In the practice of tailoring and targeting, this is a practical problem: the human who programs tailored communication has to decide which information is to be used in the algorithm. Practical advice

is usually to opt for a parsimonious procedure: include only variables that you know make a difference. But in a broader perspective this raises the issue of which variables affect the outcome of communication processes, and thus opens up many important areas of communication research within and outside the field of health.

The papers in this thematic section all address the issues above in different ways. First, the invited contribution by Rajiv Rimal, Maria Knight Lapinski, Monique Mitchell Turner, and Katherine Clegg Smith proposes a new approach for understanding and transforming clusters of behaviors based on their fundamental attributes rather than individual behavior, and explores its implications for future research. Second, Nicola Diviani and Kasisomayajula Viswanath explore how communication inequalities may contribute to or exacerbate health disparities, with special emphasis on the micro-cultural differences within Switzerland. The third invited contribution is by Elisabeth Paus and Regina Jucks, who describe a study on how laypersons rate the difficulty and comprehensibility of medical terms relative to depression. Their work highlights the importance of linguistic coordination and understanding between experts and laypersons in discussing health topics.

The paper by Anna-Linda Frisch addresses the issue of health literacy; it highlights promising ways to adapt health communication to individuals' health literacy, for instance by promoting plain language and improving the communication skills of healthcare providers. Such measures are argued to foster health-conscious behavior.

One paper deals with adapting communication to the particularities of cultural groups within Switzerland. Simone Keller is concerned with adapting risk communication to micro-cultural differences in Switzerland and lays out how this could be achieved by applying the cultural cognition project, a combination of the psychometric paradigm and the cultural theory of risk.

Two papers explore the role of the Internet. Luca Camerini discusses the potential for adaptivity offered by the Internet and derives several important lessons for future research and practice. Marco Bardus focuses on Web 2.0 and social media technologies, presenting a systematic scoping review of empirical studies of outcomes related to use of these technologies.

The paper by Colette Schneider discusses how to adapt planning, theoretical foundations and evaluation of health campaigns depending on campaign goals and based on scientific research. It is a call to action for practitioners and a useful primer for choosing appropriate theory and making informed choices in campaign design.

Finally, two papers focus on face-to-face communication in medical settings. The paper by Gaetan Cousin discusses how physicians' communication styles interact with patient characteristic in affecting important characteristics of the relationship like trust. Finally, Eric Mayor's paper reviews literature on communication in nursing teams, focusing on shift-change handover routines. He argues that organizational theory can be applied to understand when it is beneficial to standardize communication during handover and when it is not.

Together, this collection of papers constitutes a strong, multifaceted and, we believe, unique contribution to the topic of adapting communication in the health domain. We wish you an enjoyable read!

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References

Bensing, J.M. (1991). Doctor-patient Communication and the Quality of Care. *Social Science and Medicine* 32: 1301–1310.

Brug, J.; Oenema, A. & Campbell, M. (2003). Past, Present and Future of Computer-tailored Nutrition Education. *American Journal of Clinical Nutrition* 77: 10285–10345.

Campbell, M.K. (2008). Tailoring, Communication and. In: W. Donsbach (ed.). The International Encyclopedia of Communication XI. Malden, MA: Blackwell: 4952–4954.

Campbell, M.K. & Quintiliani, L.M. (2006). Tailored Interventions in Public Health: Where does Tailoring fit in Interventions to reduce Health Disparities? *American Behavioral Scientist* 49: 775–793.

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CLARK, H.H. (1996). Using Language. Cambridge: Cambridge University Press.

HORNIK, R.C. & RAMIREZ, A.S. (2006). Racial/Ethnic Disparities and Segmentation in Communication Campaigns. *American Behavioral Scientist* 49: 868–884.

HOVLAND, C.I. & WEISS, W. (1951). The Influence of Source Credibility on Communication Effectiveness. *Public Opinion Quarterly* 15: 635–650.

KREUTER, M.W.; STRECHER, V.J. & GLASSMAN, B. (1999). One Size does not fit all: The Case for tailoring Print Materials. *Annals of Behavioral Medicine* 21: 276–283.

KREUTER, M.W. et al. (2000). Tailoring Health Messages: Customizing Communication with Computer Technology. Routledge Communication Series.

KREUTER, M.W. & HAUGHTON, L.T. (2006). Integrating Culture into Health Information for African American Women. *American Behavioral Scientist* 49: 794–811.

KROEZE, W.; WERKMAN, A. & BRUG, J. (2006). A Systematic Review of Randomized Trials on the Effectiveness of Computer-tailored Education on Physical Activity and Dietary Behaviors. *Annals of Behavioral Medicine* 31: 205–223.

KRUPAT, E.; YEAGER, C.M. & PUTNAM, S. (2000). Patient Role Orientations, Doctor-patient Fit, and Visit Satisfaction. *Psychology and Health* 15: 707–719.

LOBB, E.A. et al. (2002). Tailoring Communication in Consultations with Women from High Risk Breast Cancer Families. *British Journal of Cancer* 87: 502–508.

MEAD, N. & BOWER, P. (2002). Patient-centered Consultations and Outcomes in Primary Care: A Review of the Literature. *Patient Education & Counseling* 48: 51–61.

ORLEANS, C.T. (1999). Context, Confidentiality, and Consent in Tailored Health Communications: A Cautionary Note. *Annals of Behavioral Medicine* 21: 307–310.

PERLOFF, R.M. et al. (2006): Doctor-Patient Communication, Cultural Competence, and Minority Health: Theoretical and Empirical Perspectives. *American Behavioral Scientist* 49: 835–852.

PETTY, R.T. & CACIOPPO, J.T. (1981). Attitudes and Persuasion: Classic and Contemporary Approaches. Dubuque, IA: Wm. C. Brown.

RAKOWSKI, W. (1999). The Potential Variances of Tailoring in Health Behavior Interventions. *Annals of Behavioral Medicine* 21: 284–289.

ROBINSON, J.D. (2006). Nonverbal Communication and Physician-patient Interaction. In: V. MANUSOV & M.L. PATTERSON (eds.). The Sage Handbook of Nonverbal Communication. Thousand Oaks, CA: Sage Publications.

ROTER, D.L. et al. (2006). The Expression of Emotion through Nonverbal Behavior in Medical Visits. *Journal of General Internal Medicine* 21: 28–34.

SCHNEIDER, T.R. (2006). Getting the Biggest Bang for your Health Education Buck: Message Framing and reducing Health Disparities. *American Behavioral Scientist* 49: 812-822.

SKINNER, C.S. et al. (1999). How effective is Tailored Print Communication? *Annals of Behavioral Medicine* 21: 290–298.

STEWART, M. et al. (1995). Patient-centered Medicine: Transforming the Clinical Method. Thousand Oaks, CA: Sage Publications.

TVERSKY, A. & KAHNEMAN, D. (1981). The Framing of Decisions and the Psychology of Choice. *Science* 211: 453–458.