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Toward a Global Theory of Health Behavior and Social Change

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Introduction

Our goal in this chapter is to describe an evolution of theories of health behavior and social change and describe some practical models and case studies that reflect this evolution. We argue here, as elsewhere (Kincaid, Delate, Storey, and Figueroa, in press), that for many years our field has been moving away from the idea of communication as a one-time one-way communicative "act" toward a view of communication as an iterative social process (precisely a multilevel dialogue) that unfolds over time. The practice of health communication has changed as global health concerns have changed, as our understanding of the complexity of health determinants has improved, and as new opportunities and approaches to health communication have emerged. As communication technologies have become more diverse, accessible and affordable – closing gaps between continents and within communities alike – it makes sense to aspire to a global theory of health communication.

The Nature of Theory

Theories are analytical tools for understanding, explaining, and making predictions about topics of conceptual or practical interest. *Scientific* theories rely on formalized rules for gathering and evaluating evidence and on standards for quantifying and logically linking constructs, while everyday theories, in practice, tend to rely on commonsense observation and reasoning for sense-making and consensus building.

Theories generate hypotheses that can be tested (Hempel, 1952; Popper, 1963). In the traditional scientific sense this means designing an experiment in order to test a

hypothesis and refine theory. In a programmatic context, hypothesis testing means (1) designing a program with a change model in mind; (2) implementing the program; (3) verifying that change occurred according to the rationale that informed the program; then (4) deriving lessons and applying them to a new program. Testing hypotheses and refining theories, whether in a scientific or programmatic sense, proceeds haphazardly unless guided by systematic measurement, so any dream of a global theory carries with it some empirical obligations. As Obregon and Waisbord note elsewhere in Chapter 1 of this volume, there are few examples of global comparative research. Yet, there is an abundance of research at the national level that might be considered a form of "replication with variation" (to borrow a concept from Charles Darwin) (Dennett, 1995). Drawing on our personal experience with applied health communication programs and program research over the past 30 years in at least 30 countries, across world regions, our goal in this chapter is to provide a theoretical synthesis for global health communication.

In the sections that follow, we describe the evolution of theories in health behavior and social change and the concurrent evolution of methods and measurements. We then provide four short case studies that illustrate aspects of the evolution and conclude with some suggestions for the next stages of global theorizing.

An Evolution of Thinking

How do theories progress? A recent article by Neuman and Guggenheim (2011) analyzed citation patterns for over 20,000 communication journal articles dating back to 1933 and found evidence of six clusters of media effects theories that are roughly chronological but overlapping. Considering over 70 years of theoretical scholarship, they concluded that the history of theory is not a series of successive repudiations of earlier models. Rather, it more closely resembles the biological evolution of a simple organism into a more complex one. From a "starting point of a simple model of persuasion and transmission", theories have progressed toward a complex amalgam of constructs combining aspects of active audience processing, social context, technical attributes of channels, societal/political/institutional context, and interpretation of meaning (Neuman and Guggenheim, 2011, pp. 188–189). The result is a multilevel, richly cross-referenced body of theory, not a paradigm victory of participation over dissemination or of critical theory over modernization.

Although studies of communication sometimes use different vocabulary rooted in different traditions, the overall body of literature demonstrates clearly and consistently that communication can strengthen many aspects of human agency, whether in the domain of individuals acting to manage their own and their family's health, or in the domain of communities engaging with and challenging health systems to improve access to and quality of services, or in the domain of national governments setting health priorities and committing politically (or not) to redress health imbalances and other inequities. Today, most health communication interventions that attempt to create change – whether at the individual level or at higher levels of society – use some combination of informational, participatory, and structural change approaches in a complementary way. Therefore, an emerging global theory of health communication must account for all levels of social engagement from individual action to structural change and for interactions among them.

Our own experience as scholar-practitioners reinforces this view. Early applications of theory in health communication emphasized individual-level theories of learning, persuasion, and decision making as they related to health behavior and, especially, behavior change. Programs used psychosocial theories such as Reasoned Action/Planned Behavior (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1997) and Social Cognitive Theory (Bandura, 1986, 1995) to guide strategic planning, then evaluated the programs guided by the same frameworks (e.g., did communication affect efficacy beliefs and did efficacy beliefs in turn affect behavior?). The systematic application and testing of theories in this way over time, in varied settings and for many health issues demonstrated that it *was* possible to measure communication processes and outcomes reliably, spurring the field away from the notion of communication impact as an unobservable "black box" process (Friedenberg and Silverman, 2006, pp. 85–88) and toward more sophisticated models of change.

It is true that the early modern history of communication theory, including its application to health issues, overemphasized individual-level behavior change. This was soundly criticized, particularly by Latin American scholars (Beltrán, 1974; Diaz Bordenave, 1976), who noted a lack of attention to structural factors in social change and to power inequities that can stifle change. In response, more structurally oriented theories of change arose (Rogers, 1976) that acknowledged additional higher-order determinants of health, such as network structures and access to resources, *as well as* individual-level psychosocial factors. For example, by the third edition of *Diffusion of Innovations*, Rogers (1983) had moved beyond an information dissemination model of communication toward the convergence model (Kincaid, 1979, 2009; Rogers and Kincaid, 1981). Convergence describes a process of change grounded in socially situated dialogue, not the result of simple exposure to new information. Thus, behavioral choices take into account the appropriateness of a new practice within the social milieu; the social, economic, and, presumably, cultural costs of a change in practices; the relative advantage – economic, social, material – of a new practice over an existing one; the complexity of the practice, including access to the resources and social support one needs to actualize change; and whether it is possible to see what happened to others who have tried to change. This version of diffusion also implicitly acknowledged the importance of power – the capacity to exercise control over others – as a function of network structures and of the relationships between communicators that sometimes distort and sometimes strengthen communication and the process of change. Although commonly measured at the individual level, most of the factors listed above are inherently social and structural, not strictly individual, because they require consideration of one's neighbors, of what is acceptable and possible in one's community and society, of control over resources and access to social support and, in the case of some new practices, the extent to which one can or must collaborate with others to achieve (or resist) change.

Demand for Accountability

At the same time that a shift was happening toward more social and structural views of communication, more and more opportunities for applied research in diverse settings were being funded under a series of global procurements for health communication

technical assistance by, among others, the United States Agency for International Development (USAID). These agreements included The Mass Media and Health Practices (MMHP) project (1978–1985) and its successors, the Healthcom project (1985–1994), the Population Communication Services project (1982–2004), the Health Communication Partnership project (2003–2009) and the C-Change project (2009 to date). USAID's virtually unbroken 35-year investment in health communication helped drive theory development through demands for objective evidence of the nature and magnitude of communication effects on health behavior and health outcomes as a condition for funding.

Particularly in the area of population and reproductive health, a rapid expansion of funding for family planning programs in the 1980s (Piotrow *et al.*, 1997; Blanc and Tsui, 2005) focused attention on the role of communication in global fertility change (reduction in the average number of children borne in a woman's lifetime) and on subsequent declines in population growth rates that threatened economic development. Along with a series of multiyear, multicountry global contracts for health communication between the late 1970s and the present came demands to conclusively link communication inputs to outcomes and impact and to develop *predictive* models of change at the level of individual behavior (e.g., contraceptive use), as well as at the level of societal health outcomes (e.g., contraceptive prevalence (CPR)) that would guide future planning and investment. Especially after the year 2000, the requirements for sophisticated research and evaluation approaches intensified.

Admittedly, most of the funding available through these initiatives went toward the development and implementation of programs at the national level; little funding was made available for comparative research across the many countries where these projects operated. What synthesis did occur was usually the result of global project staff and researchers working in multiple countries and on multiple health issues who carried lessons learned from one project to another and from country to country. Some visionary program directors, like Phyllis Piotrow (Piotrow *et al.*, 1997) of the PCS project, helped foster this synthesis by insisting that all communication initiatives allocate at least 10 percent of their budget to research. Later, under the HCP project, core funding was dedicated to secondary analysis of data, resulting in the publication of over 120 peer-reviewed, project-related articles over a six year period.

One example of the synthesis this generated was the concept of *ideation*, derived from Cleland and Wilson's iconoclastic (1987) work on global fertility transition. Ideation was defined as a set of knowledge, attitudinal, social support, and social interaction variables (all of which could be influenced by communication) that together predicted the use of contraception and CPR across a variety of national settings, resulting in a reliable model of global fertility change (Kincaid, 2000) based on psychosocial and cultural factors, rather than just on levels of education or economic development. A five-country study in Nepal, The Philippines, Tanzania, Honduras, and Egypt (Kincaid *et al.*, 2007a) confirmed that ideation had a significant effect on the use of contraception, increasing the odds of family planning use by 20 to 30 percent, even after controlling for a wide variety of other socioeconomic factors. Since that study, the ideation model has been used and tested in programs addressing numerous health issues, including safe water handling, handwashing and hygiene, HIV/AIDS stigma reduction, democracy and governance, and avian influenza prevention, among others, lending further support to the generalizability of this concept.
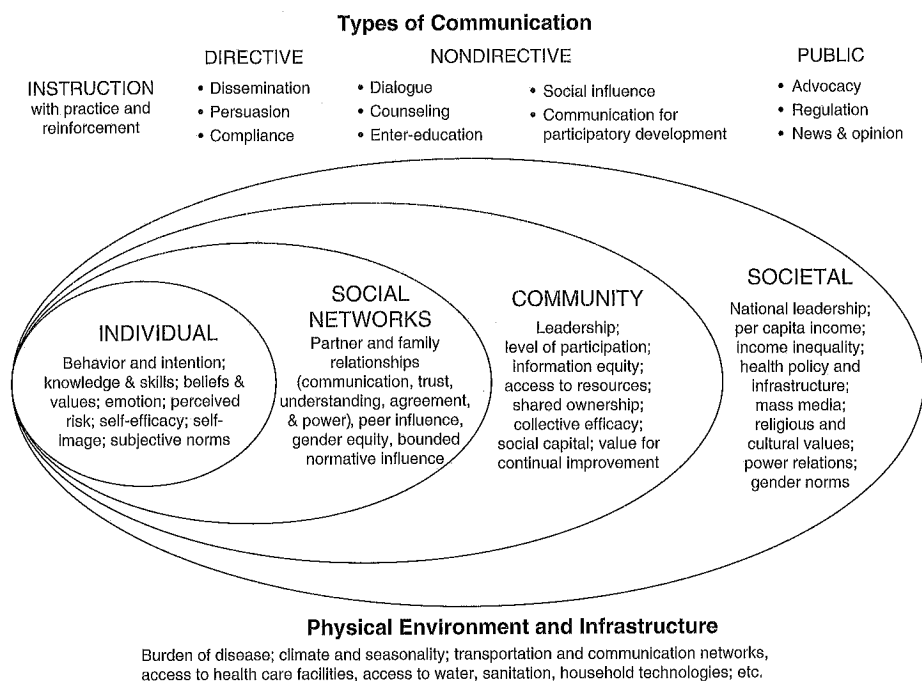
The Role of Community

Yet, even as research confirmed the predictive value of psychosocial theories, it became clear that there were missing theoretical elements, notably community-level processes and how they contribute to health outcomes. In our view, this omission generally was not an intentional result of an individual level paradigm bias. Rather, it was the result of a lack of appropriate tools and methods for *measuring* community phenomena. Most of the early evidence of community processes and effects on health outcomes was anecdotal or qualitative in nature; there were few quantitative measures available that were not merely the sum of individual-level changes. Aggregated individual data at the community-level – the percent using a contraceptive method, for example – are useful for analyzing population trends (e.g., contraceptive prevalence rate), but do not capture collective phenomena (e.g., resource equity or social cohesion). And while qualitative assessments of community processes by themselves can be richly informative, they cannot generate population-based estimates of disease prevalence or program impact, hampering the ability to predict program results with any precision or to generalize research findings to the larger population.

Two models that helped bridge this gap were the Integrated Model of Communication for Social Change (Figueroa *et al.*, 2002) and the more recent Communication for Participatory Development Model (Kincaid and Figueroa, 2009). Kincaid and Figueroa (2009) identified eight issues that any comprehensive theoretical model needed to address and be able to measure, focusing in particular on community level processes. Models should: (1) reflect human development in local communities, as well as change at the national (structural/political) level; (2) emphasize dialogue as a symmetrical, two-way process of communication; (3) reconcile the demand for social change at the community level with the need for change at the individual level; (4) feature local ownership of the change process in order to minimize reliance on external stimuli and resources; (5) recognize the importance of self-determination as well as the catalytic and facilitative role of external change agents; (6) acknowledge the inevitability of local conflict and suggests ways to manage or resolve it; (7) allow for self-assessment during the change process to sustain collective action; and (8) acknowledge the importance of access to mass media as well as to local media, such as community radio, posters/billboards, traveling theater groups, and – increasingly – mobile technologies that allow individuals and groups to produce and exchange their own content, rather than rely primarily on external sources of content.

Ecological Models of Behavior

Models like this challenged practitioners and theorists alike to think holistically, leading toward a social-ecological perspective on health communication. In the biological sciences, *ecology* refers to the complex interrelationships among organisms and the environment in which they live, in essence a biophysical "dialogue." By extension, *social* ecology is "the study of the influence of the social context on behavior, including institutional and cultural variables" (Sallis and Owen, 2002, p. 462). Social ecological approaches take into account the interconnected influences of family, peers, community and society on behavior (Sallis and Owen, 2002; Jamison *et al.*, 2006; Powell *et al.*, 2006). From

Types of Communication

DIRECTIVE		NONDIRECTIVE		PUBLIC

INSTRUCTION
with practice and
reinforcement

- Dissemination
- Persuasion
- Compliance

- Dialogue
- Counseling
- Enter-education

- Social influence
- Communication for
  participatory development

- Advocacy
- Regulation
- News & opinion

INDIVIDUAL

Behavior and intention;
knowledge & skills; beliefs &
values; emotion; perceived
risk; self-efficacy; self-
image; subjective norms

**SOCIAL
NETWORKS**

Partner and family
relationships
(communication, trust,
understanding, agreement,
& power), peer influence,
gender equity, bounded
normative influence

COMMUNITY

Leadership;
level of participation;
information equity;
access to resources;
shared ownership;
collective efficacy;
social capital; value for
continual improvement

SOCIETAL

National leadership;
per capita income;
income inequality;
health policy and
infrastructure;
mass media;
religious and
cultural values;
power relations;
gender norms

Physical Environment and Infrastructure

Burden of disease; climate and seasonality; transportation and communication networks,
access to health care facilities, access to water, sanitation, household technologies; etc.

Figure 4.1 Social ecology model of communication and health behavior.
Source: Kincaid, D. L., Figueroa, M. E., Storey, J. D. and Underwood, C.R. (2007b). A social ecology
model of communication, behavior change, and behavior maintenance. Working paper. Center for
Communication Programs, Johns Hopkins Bloomberg School of Public Health.

this perspective, health communication programs must be seen as a form of dialogue, too. If conceptualized as a *dialogue* with the audience, then a communication program can be reconceptualized as a self-correcting feedback process, defined dynamically as a diminishing series of under-and-over corrections *converging* on a goal (Kincaid, *et al.*, in press). Effective communication begins with the audience and continues over time as a process of mutual adjustment and convergence (Piotrow, *et al.*, 1997). Properly conducted, formative research and pretesting of activities and materials is a "conversation" between members of the audience and those who design and conduct the program. It gives the audience or stakeholders a chance to speak first – to provide valuable information about their own situation, beliefs and values, current and past behavior, hopes and dreams for a better life. Monitoring research tells us who and how many are listening or otherwise participating. Impact evaluation measures how many have been affected, in what ways, and why, enabling improvements in the next "conversation." From start to finish, this process is designed to reduce the gap between the initial state of the audience or community and its desired state, as specified by the audience or community itself and the objectives of the program (Kincaid *et al.*, in press).

Ecological thinking is not new. As early as 1946, the World Health Organisation drew attention to the fact that many of the barriers to change at one level can be found in conditions at higher levels of the social system (WHO, 1946). Unfortunately, none of these early ecological models explicitly mention communication. Figure 4.1

depicts an updated version of ecological thinking that includes communication. The Social Ecology Model of Communication and Health Behavior (SEMCHB) (Kincaid et al., 2007b) describes the complexity, interrelatedness, and wholeness of the components of a complex adaptive system, rather than just particular components in isolation from the system. The two key features of this model are the assumptions of *embeddedness*, a state in which one system is nested in a hierarchy of other systems at different levels of analysis, and *emergence*, in which the system at each level is greater than the sum of its parts.

The SEMCHB is a *metatheory* in the sense that each level shown in the model encompasses theories of change for that particular level. For example, the ideational model of communication and behavior change described above fits largely into the individual level; interpersonal relationship theory and bounded normative influence theory (Kincaid, 2004) fit into the social network level; the communication for participatory development model (CFPD) (Kincaid and Figueroa, 2009) applies to the community level; while theories of mass media effects on society such as cultivation (Gerbner et al., 1986; Morgan, 2009) fit into the societal level. The main contribution of the ecological model is to emphasize how higher levels facilitate or constrain change at lower levels of analysis; suggesting that communication interventions should address all four levels to be effective.

The model also implies that if individual change is facilitated and supported by social changes at higher levels it is more likely to be self-sustaining. Individuals who go against prevailing norms, who attempt to change without support and complementary change from other family members, or who defy local community leaders or power brokers will find it difficult to maintain new behavior even if highly motivated to change. An anecdotal example of societal-level constraints on community leaders is the case of a traditional chief in KwaZulu Natal, South Africa, with whom we worked, who reached the conclusion in 2007 that the AIDS epidemic was so severe in his village that everyone should be tested for HIV infection. However, political pressures and lack of attention to HIV/AIDS issues that arose during national and provincial elections that year sidetracked his plan. What would this traditional chief have done if the leaders of his party and national leaders had publicly encouraged local leaders to advocate HIV testing in their communities?

While SEMCHB portrays health within an ecological context, it is not an operational model because it provides little specific guidance for the design and implementation of programs. Ideal strategies do not just implore people to change or decry inequities that suppress change. They must identify specific desired outcomes of a communication program, specify the direct and indirect determinants of those outcomes, and detail how communication will influence those determinants. When we speak of direct and indirect determinants, we refer to individual health actions and the social psychological drivers of behavior, as well as to community engagement and participation and the effectiveness of and access to health care delivery systems, all supported by enlightened health policy. All of these determinants, of course, can be influenced by communication.

Health Competence

Closer to an operational or predictive model of health communication is the Pathways™ to Health Competence model (Storey *et al.*, 2006). The concept of health competence reflects the continuing evolution of multilevel ecological theories of behavior. In early 2002, the Office of Population and Reproductive Health of the United States Agency for International Development (USAID) issued a Request for Applications for a global health communication project (USAID, 2002). USAID was at the time undergoing structural change through which divisions responsible for population and reproductive health, child survival, maternal and child health, HIV/AIDS, and infectious disease would be organized into a single Global Bureau for Health. This procurement, which became the Health Communication Partnership (HCP) project, was intended to serve the health communication needs of the entire Bureau in an efficient manner, cutting across health domains to "employ communication effectively to improve health, stabilize population, and advance a health-competent society" (USAID, 2002, p. 6). A health-competent society is one in which individuals, communities, and institutions have the knowledge, attitudes, skills, and resources needed to improve and maintain health (Storey *et al.*, 2006).

Conceptually, the Pathways™ model emerged from an extensive review of theories and evidence regarding levels or domains of communication activity and impact. For example, at the individual and interpersonal level, competence factors related to decision-making and behavior are derived from such theories as reasoned action/planned behavior (Ajzen and Fishbein, 1997), social learning (Bandura, 1986), diffusion (Rogers, 2003), and risk management (Witte and Allen, 2000) models, as well as theories of emotion (Zajonc, 1984), social comparison and influence (Festinger, 1954; Suls, 1977), subjective norms (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1997), self-efficacy and collective efficacy (Bandura, 1986, 1997), self-image (Triandis, 1972), subjective risk (Becker, 1974), and personal advocacy (Piotrow *et al.*, 1997).

At the community level, other frameworks such as health literacy (e.g., Kickbusch and Nutbeam, 1998; Nutbeam, 2000) and social capital (Putnam, 1993, 2001; Kawachi, Kennedy, and Lochner, 1997) inform health competence. Both concepts have cognitive dimensions (e.g., trust and reciprocity) and structural dimensions (e.g., patterns and levels of participation in groups). For example, in terms of health, social capital facilitates social mobilization for health improvement, structurally enhances access to and the flow of information and increases the likelihood of social, emotional and material support for behavioral decision-making.

Also at the community level, the previously mentioned *Integrated Model of Communication for Social Change* (Figueroa *et al.*, 2002) informs health competence through its focus on the process of community dialogue leading to collective action, which is itself based on theories of development communication (Beltran, 1974; Diaz Bordenave, 1994), theories of group dynamics, conflict resolution, and network/convergence (Kincaid, 1979), as well as less often considered perspectives on such topics as
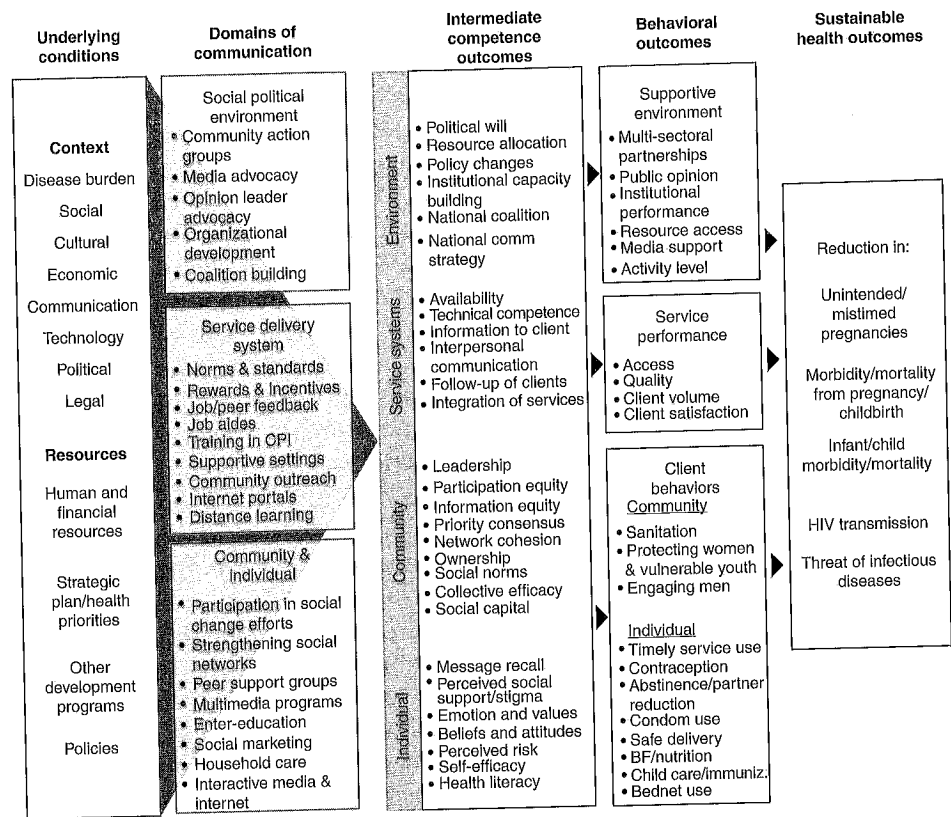
Underlying conditions

Context

Disease burden

Social

Cultural

Economic

Communication

Technology

Political

Legal

Resources

Human and financial resources

Strategic plan/health priorities

Other development programs

Policies

Domains of communication

Social political environment
- Community action groups
- Media advocacy
- Opinion leader advocacy
- Organizational development
- Coalition building

Service delivery system
- Norms & standards
- Rewards & incentives
- Job/peer feedback
- Job aides
- Training in CPI
- Supportive settings
- Community outreach
- Internet portals
- Distance learning

Community & individual
- Participation in social change efforts
- Strengthening social networks
- Peer support groups
- Multimedia programs
- Enter-education
- Social marketing
- Household care
- Interactive media & internet

Intermediate competence outcomes

Environment
- Political will
- Resource allocation
- Policy changes
- Institutional capacity building
- National coalition
- National comm strategy

Service systems
- Availability
- Technical competence
- Information to client
- Interpersonal communication
- Follow-up of clients
- Integration of services

Community
- Leadership
- Participation equity
- Information equity
- Priority consensus
- Network cohesion
- Ownership
- Social norms
- Collective efficacy
- Social capital

Individual
- Message recall
- Perceived social support/stigma
- Emotion and values
- Beliefs and attitudes
- Perceived risk
- Self-efficacy
- Health literacy

Behavioral outcomes

Supportive environment
- Multi-sectoral partnerships
- Public opinion
- Institutional performance
- Resource access
- Media support
- Activity level

Service performance
- Access
- Quality
- Client volume
- Client satisfaction

Client behaviors
Community
- Sanitation
- Protecting women & vulnerable youth
- Engaging men

Individual
- Timely service use
- Contraception
- Abstinence/partner reduction
- Condom use
- Safe delivery
- BF/nutrition
- Child care/immuniz.
- Bednet use

Sustainable health outcomes

Reduction in:

Unintended/mistimed pregnancies

Morbidity/mortality from pregnancy/childbirth

Infant/child morbidity/mortality

HIV transmission

Threat of infectious diseases

Figure 4.2   Pathways to a health-competent society.
Source: Center for Communication Programs, Johns Hopkins Bloomberg School of Public Health.

leadership (e.g., Senge, 1994; Stodgill, 1974; Lord and Brown, 2004; Tirmizi, 2002; Chemers, 2000) and equity (Gumucio-Dagròn, 2001; White, 1994; Moser, 1993).

Because health competence is determined by the combination of many interrelated factors, it is not an either/or condition; rather it lies along a continuum from low to high. A health-competent society is one in which competence is strong at multiple levels. People who are health-competent act appropriately and consistently to improve and/or maintain health across whatever health areas become personally relevant (e.g., infection prevention, healthy lifestyles, maternal and child health, reproductive health) or at the levels where they exercise responsibility (e.g., the household, the community, the delivery of services, the formulation and implementation of policy).

According to this perspective, *health-competent environments* enact policies that create opportunities for communities and individuals to flourish, allow decision making through debate and dialogue among the media, community and civil society, and provide universal access to health information. *Health-competent service delivery systems* provide access to quality services and products; have adequate capacity in their workforce (leadership, management, training, professionalism); and have governance structures

through which stakeholders can access and be involved in the design and operation of health systems. *Health-competent communities* are involved in setting health agendas, have structures and systems that allow members to participate in planning, setting priorities and ensuring that the means of communication are available to all. At the *individual* level, people participate in local governance, express appropriate demand for care-seeking/providing behaviors, make health-enhancing lifestyle choices across a range of health issues (e.g., reproductive health, diet, substance use, and child care), and adhere to treatment protocols, because they understand and realize the benefits of such actions.

Communication influences health competence and health-competent behavior in a variety of ways and can be used instrumentally in social and behavior change programs to help individuals, communities, service delivery systems and whole societies progress toward sustainable health outcomes. While the model has an implicit left-to-right orientation, suggesting causal order and progression toward (pathways to) improved health, consistent with common models of social and behavior change, it should not be interpreted as endorsement of a strictly linear communication and change process. In fact, all levels and stages of change interact to reinforce each other.

Evolution of Methods and Measurement

No discussion of theory is complete without consideration of the research methods and measurement approaches upon which the theory is based. As theories in health communication have evolved so the research methods and the measures to monitor the process of health communication and its effects have developed over time. In fact, many of the advances in ecological theory would not have been possible without the simultaneous evolution of methods and measures in response to donor demands for reliable evidence of impact and causal attribution. From reliance on simple associations between program exposure and outcomes used in the late 1980s to the measurement of the direct and indirect effects of communication in the 1990s, to sophisticated multivariate and multilevel analyses in the 2000s, applied health communication research has been informed by – and has informed – the development of theories. At our Center, if not elsewhere, four principles have consistently guided applied research during this extended period: (1) formative research should be interdisciplinary (including the use of local theories and local knowledge) in order to explore the multilevel factors that affect health practices; (2) program monitoring and outcome monitoring should aim to learn from the communication process as it unfolds by systematically tracking the implementation process and intermediate outcomes, respectively; (3) impact evaluation should be future-oriented and theory-based (Chen, 1990) in order to understand the program's transformation processes (i.e., *how* the communication worked) and determine how to improve the program, and (4) program implementation and program research and evaluation should be fully integrated across the entire program cycle and should involve local expertise from the start in order to tap local wisdom and build local capacity.

The Contribution of Methods and Measurement
to Theory

It is beyond the scope of this chapter to thoroughly describe the many ways in which these four principles of health communication research have contributed to bring health communication theory and practice to where it is today.

Briefly, *formative research* helps bring the "voices" of people into the design of the program. While most programs in the late 1980s and early 1990s focused on the individual as the main audience, much of the formative research attempted to identify social and structural influences on individual motivations and choices, including the influence of secondary audiences such as husbands, mothers-in-law, health providers, community leaders, and others who exert positive or negative social pressure. As early as 1996, formative research for the *Puentes* project in rural Peru (see more below) used a triangulation approach to identify higher-level factors that had resulted in lack of, and untimely use of, health services.

Formative research methods and approaches evolved as health issues grew in complexity and as dissatisfaction with the quality of information derived from traditional methods such as focus groups and in-depth interviews increased. Participatory research methods expanded dramatically in the mid 1990s, introducing new ways to gain deeper insight into prevailing mental models and sense-making related to wellness, disease, and health decision making. Recently, projective techniques such as photo-elicitation were used in Mozambique to help stakeholders articulate culture-based values and beliefs related to gender and sexual norms by projecting their thoughts onto photographs of couples and events. Other methods being used in Mozambique include the "photo-voice" technique, which uses photography taken by youth and music to reflect attitudes toward health. Content analysis of newer forms of communication such as text messages and Twitter feeds, as well as analysis of the networks formed using social media, offer additional opportunities to bring people's reality and voices into the development of media content and to understand how that content is used.

Monitoring research is used to track whether or not a program is being implemented as planned, is reaching the intended end users, and is generating the expected reactions to communication activities and materials. Depending on the program timeframe and resources, monitoring can also contribute to the development of audience-centered communication content. For example, (Singhal and Durá, 2010) used a system of "cultural scorecards" to assess initial success at achieving desired health outcomes. The growing access to interactive and social media such as text messaging and Facebook creates opportunities for qualitative and participatory program monitoring that allow people to openly and in "real time" express their reactions to the content of a program. These same phone- and Internet-based technologies allow health communication programs to analyze mass response from audiences that has always been there but was hard to access. New data capture methods like these contribute to our theoretical understanding of social communication in ways we could not have imagined just a few years ago.

Program evaluation also has become increasingly theory-driven, as opposed to method-driven. Theory-driven evaluation is designed to both measure the effect of a

program on desired outcomes while simultaneously explaining how and why change occurred in order to improve future program efforts. Quantitative methods have become increasingly rigorous and sophisticated, requiring considerable training to be used correctly and effectively. Methods have evolved from simplistic treatment-control experimental designs that can manipulate only one variable at a time, to complex, dynamic, multivariate approaches (often paired with qualitative methods) that are appropriate for evaluating large-scale, population-based, multimedia programs over time, and which also permit modeling of sophisticated social and behavioral theories. Examples of some of these newer methods include the measurement of communication dose response (Kiragu *et al.*, 1996), the measurement of indirect exposure and effects (Boulay *et al.*, 2002), the role of ideation (Kincaid *et al.*, 2007a), the use of time-series analyses (Kincaid *et al.*, 2002), propensity score matching (Babalola and Vondrasek, 2005; Kincaid and Do, 2006) and Multivariate Casual Attribution (MCA) analyses (Babalola and Kincaid, 2009) and multilevel analysis (Babalola, 2008).

Despite the vast body of evaluation literature, however, health communication scholars continue to struggle to keep up with theory, particularly ecological theory. The quantification of social and structural factors, although steadily improving, is still based largely on the aggregation of individual data to the group or cluster level, thereby still falling short of operationalizing collective aspects of theory. Qualitative methods fare somewhat better at describing higher conceptual levels, but themselves fall short on generalizability and on the generation of population-based estimates of effects. These methodological limitations will continue to challenge us as we attempt to develop a global theory of health communication, but the effort to address those challenges and develop the appropriate methodologies to match our theories will be worthwhile.

Applications of Multilevel Ecological Models

Ecological models like Pathways™ to health competence can help theorists and practitioners identify and interpret needs and opportunities for health communication within and across levels of society. They also provide a framework for global comparative research, but to date only limited comparative research has been done using this model (Storey, Kaggwa, and Harbour, 2006). Little work has examined the impact of political/environmental level factors on health outcomes because this would require cross-national comparisons. Such research opportunities are limited by the existing funding structures for health communication that are oriented primarily toward national, subnational or even community-based programs. For example, although the health competence model was designed for use in the global Health Communication Partnership program (http://hcpartnership.org/) that eventually operated in 21 countries, the resources for research were usually insufficient for tests of the health competence model across all competence levels within each country, let alone at all levels in multiple countries. So while there are few *global* research projects, there may be growing opportunity for *international* synthesis across a growing body of programs that use a multilevel ecological approach.

Aman Tirta: Public–private partnerships and policy change for safer water

Unsafe drinking water is a major cause of diarrhea, which is the second leading killer of children under five in Indonesia. Boiling water in Indonesia is a universal practice. However, stored drinking water at home is often found contaminated with E.coli, a bacterial indicator of fecal contamination.

Initially, *Aman Tirta* began as a solely private venture. In partnership with CARE International Indonesia, two commercial companies – PT Tanshia Consumer Products and Ultra Salur – developed a public–private partnership (PPP) approach to create the first fully sustainable (non-subsidized, self-financing) commercial model to promote a specific safe water systems product: *Air RahMat*. This low-cost water disinfection technology was introduced in Indonesia in 2005 to provide households with an alternative technology to prepare their drinking water. When used correctly in conjunction with proper storage, *Air RahMat* is 15 times cheaper than boiling water and studies have shown that it reduces the risk of diarrhea up to 85 percent. Commercial manufacturing and distribution of *Air RahMat* plus community participation and media promotion activities that engage communities (including locally produced sociodramas, puppet shows, and youth group activities) created demand for the product and for safe water practices.

Advocacy communication with the Ministry of Health (MOH) created an enabling environment for household water treatment and safe storage by introducing several methods of water treatment (filtration, chlorination, and others) to Indonesian households, who have consistently used boiling but not fully benefitted from safe water. By introducing and actively promoting a Community-Based Total Sanitation policy beginning in 2008, the MOH focused public attention on a hygiene behavior cluster that included five practices: no open defecation, hand washing with soap, household water treatment and safe storage, solid waste management, and waste water management. This new policy also endorsed several treatment technologies, including *Air RahMat*, that were totally unknown to Indonesian households when the program started. At the same time the Ministry of Health decided to scale up the program and set a goal of implementation in 330 districts or 20,000 villages by 2014, ensuring the sustainability of household water treatment, safe water storage and other hygiene practices.

Puentes: Bridging services and community

The *Puentes* (Bridges) project in Peru (1997–2004), was a USAID-funded initiative implemented by a partnership of the Johns Hopkins Center for Communication Programs, Save the Children and the Peru Ministry of Health (MOH). In rural Peru, the relationship between clients and providers was a major barrier to utilization of reproductive health services: cultural power relationships and educational and socio-economic gaps between clients and providers lead to poor communication. Traditionally, efforts to improve the utilization of health services focus on the supply side by strengthening providers' clinical skills (training); improving management systems, logistics and finances; formalizing and enforcing standards for service delivery, and so on. But the supply side approach may not address community concerns and perspectives, i.e., the demand side.

To correct this imbalance, *Puentes* "listened" to community members and providers then tried to develop shared responsibility between health providers and community members and increase communities' sense of ownership in achieving quality public health services. *Puentes* established a local project team for planning, implementing and monitoring the project. Led by Save the Children, the team was trained in community mobilization principles, facilitation skills, participatory techniques, and interpersonal communication skills. Communities were identified where there was interest in participating in the project, where the need to improve relations had been identified, and where women could be involved in the development of the project. Together, communities and health personnel conducted a self-diagnosis using participatory videos. Using the video as stimulus, the community and health service groups met over two days to develop a definition of "quality" and a joint action plan that focused on such improvements as affordable medicines in stock, shorter waiting times, 24-hour access to care, understandable information, confidentiality and privacy, more equitable balance of power between communities and service providers, more mutual respect, and more female service providers.

What changed as a result? Health officials and community members reported increased use of health services, the formation of joint committees to coordinate, monitor, and document activities, regular meetings between communities and service providers to review progress toward the quality goals, expanded hours of service, and better drug stocks. In terms of health impact, a comparison between villages in project and non-project areas showed significant increases in family planning use and lower incidence of acute respiratory infection (seasonally adjusted) in project areas only. Finally, the methodology was adopted by the Ministry of Health's national quality improvement project, although not without some initial problems as higher power structures shut down some of the joint efforts by communities and providers.

One lesson illustrated by *Puentes* is that structural change at the community (no less at the national and even global) level is often needed as a precondition to improvements in health. Efforts to promote reform in such things as media policy and donor agency priorities, while important, should not take precedence over efforts to change conditions at the national and community levels where investments in health communication and communication capacity building can have direct and immediate impact on health outcomes. Global theories of health behavior and social change should, therefore, acknowledge global structural issues while focusing attention on practical national- and community-level efforts where change can be most readily achieved. Furthermore, by focusing on activities by and with national and local institutions and groups, local capacity to design, implement, and evaluate health and development programs is enhanced, leading to more sustainable change.

Communication for Healthy Living: Health as an entry point to civil society

"Healthy Families, Healthy Communities" was the focal point for this community-based component of the USAID-funded Communication for Healthy Living project in Egypt (2003–2011). For a full description of this program, see Hess, Meekers, and Storey,

Chapter 18 in this volume. One key strategy was to create capable community development associations (CDAs). CDAs already exist throughout Egypt with the purpose of providing community services and providing local leaders with mechanisms for using available resources, but their capacity varies widely. Some, with greater experience and capacity, were identified as "veteran" CDAs, while those with less experience and capacity were identified as "novice" CDAs. Veteran CDAs received some initial training and seed funds to learn how to transfer their experience to novice CDAs and support them to initiate community activities.

CDAs take on the role of mobilizing their community and promoting behavior change in four health areas: family planning and reproductive health; maternal and child health; infectious disease prevention (including avian influenza, H1N1, and hepatitis; and healthy lifestyles (including hygiene, safe water, and chronic disease prevention). Specific priorities and activities were determined by the communities themselves. Over time, 49 CDAs implemented community activities in five governorates of rural Upper Egypt, reaching a population of about 1.7 million people.

Interventions are implemented primarily *for and by* women, who work as change agents at the village level. Using the Arab Women Speak Out (AWSO) women's empowerment curriculum (Underwood and Jabre, 2008), CDAs train female volunteers, who then become locally recognized role models in their families and communities. Approximately 24,000 women received AWSO training and from these, 1400 volunteers became formal outreach workers in their communities, thus bridging the gap between knowledge and action. Together with the CDA, these women develop activities tailored to the local community, based on CHL's Family Health Package, consisting of integrated family planning, reproductive health, and maternal and child health topics, as well as information on water and hygiene, nutrition, female genital cutting, tobacco, safe injection practices and HIV/AIDS.

By the end of the program, three out of four pregnant women in focal villages were receiving at least five prenatal check-ups, compared with only one in three before the program. Ninety-nine percent of births to women in the intervention villages met the WHO standards for average birth weight, compared to only 86 percent in the rest of Upper Egypt. Over 80 percent of women in the intervention villages were using family planning in the postpartum period, compared with 48 percent before the program started. The percent of children classified as malnourished in intervention villages declined from 30–40 percent at the beginning of the program to 2–5 percent at program's end.

Not only women were involved. *Dawar* meetings, a term referring to traditional weekly gatherings of male heads of households usually from a single extended family, were used as an opportunity to engage men in program activities. The main objectives of this component were to increase dialogue around family health issues among men, to increase access among men to health information, to mobilize their support of women's participate in program activities, and to mobilize community dialogue on health priorities and solutions to the village's health and environmental problems.

Community participation helped overcome barriers to public discussion of health issues and built confidence in community ability to mobilize for community improvements in schools facilities, road repair, health unit functioning and waste management.

After three years of CDA activity at the village level, the program was scaled up when several veteran CDAs began offering community training to villages at the district level. Many communities developed their own successful spin-off health programs based on the Family Health Package, generating demand in neighboring communities for assistance from the "veteran" communities. Guide manuals and materials developed for the initial intervention villages in five governorates were rolled out at the national level in 2009 and have now been adopted by nine governorates. The successful "modeling" of effective community response has encouraged new villages to adopt the approach. Village councils have come to acknowledge the role of CDAs in health advocacy and health improvement.

In terms of financial sustainability, within one year the average annual cost of implementing community-based activities in the intervention villages declined from $15,000 to $5,000 because participating villages themselves mobilized cash and in-kind resources, thereby increasing the sustainability of the program. CDAs used skills they learned during the training and mentoring process related to resource mobilization, financial management, fund raising and proposal development increased the financial stability of these organizations. Veteran CDAs that had mentored new CDAs frequently formed ongoing working relationships to submit proposals to government agencies and donors for funding support. Most CDAs developed multiple sources of funding beyond the original funding support from USAID.

Tsha-Tsha and *Scrutinize*: Mass media for cultural change

Beginning in 2003, the South African Broadcasting Corporation (SABC) began airing a television drama series, *Tsha Tsha*, produced by the Centre for AIDS Development, Research and Evaluation (CADRE) and Curious Pictures, with technical assistance from Johns Hopkins Health and Education in South Africa (JHHESA), a locally registered and run NGO. *Tsha Tsha* was part of a five-year USAID-funded effort to develop, implement, and evaluate high-profile HIV prevention, care and support, and treatment campaigns that would promote and reinforce positive behaviors and attitudes and shift social norms and cultural values.

The primary audience for *Tsha Tsha* was youth and young adults aged from 16 to 35. Although it was focused on HIV/AIDS, it covered a wide spectrum of related issues including care and compassion for people living with AIDS, stigma reduction, voluntary counseling and testing, risk reduction behaviors including condom use, secondary abstinence, faithfulness, and partner reduction. Avoiding a didactic tone, the series focused on the choices young people make as they transition to adulthood and how those choices are tied up with culturally driven questions of identity and social influences. Compelling and highly popular characters modeled self-reflection and how to become active agents choosing the shape of their own lives.

The *Tsha Tsha* scripts were informed by extensive formative research, both qualitative and quantitative, as well as by extensive pretesting. An independent national survey at the end of the first year of broadcasting used a battery of items to measure psychosocial variables associated with behavioral choices, including detailed questions about program

recall, character identification, empathy, cultural norms and values, and social influences. Exposure to 17 other HIV/AIDS programs, both media-based and community-based, was also measured. The use of propensity score matching techniques (Babalola and Kincaid, 2009; Kincaid and Do, 2006) to adjust for exposure bias and other control variables found a 14 percentage point increase in getting an HIV/AIDS test and a 13 percentage point increase in condom use resulting from exposure to *Tsha Tsha,* even after controlling for exposure to other HIV/AIDS programs.

On the heels of the *Tsha Tsha* success, a subsequent initiative, *Scrutinize,* was developed in 2009 to increase awareness of risk behaviors among young people (18–32 years of age) related to HIV infection including: the risk of having two or more partners at the same time; the linkage between alcohol, sex, and HIV; and the exchange of sex for money or material goods. *Scrutinize* is a joint effort by JHHESA, Levi Strauss's *Red for Life* campaign, USAID, PEPFAR, and other partners. It was comprised of eight animated advertisements (animerts) broadcast on national channels and in the waiting rooms of 307 clinics nationwide. YouTube versions of the final seven animerts used in the campaign are available on-line at the JHHESA website, http://www.scrutinize.org.za, and the Matchboxology website, http://www.matchboxology.com/. *Scrutinize* also included promotional items such as bar coasters, stickers, umbrellas, hats, HIV risk cards, Levi *Scrutinize* T-shirts, and posters that showed how to use condoms correctly and one that illustrated sexual networks, many of which linked the *Scrutinize* theme to football (soccer). Unplanned publicity occurred when one of South Africa's most popular DJs, Cleo, showed dancers in one of his music videos wearing the Levi T-shirts. Coverage of the campaign also appeared in newspapers (Kincaid *et al.,* in press).

A national impact evaluation of the *Scrutinize* campaign (Kincaid *et al.,* in press) found that correct recall of the animert on the risks associated with having multiple concurrent sexual partners (MSP) had a *positive* direct impact on knowledge of MSP risks and a direct *negative* impact on MSP behavior. Using propensity score matching techniques again, analysis of survey data indicated a 3.2 percentage point decrease in MSP behavior attributable to exposure to the MSP spot. Because the survey was population-based, it was possible to extrapolate to the number of people reached and affected by the campaign. Of the 10.8 million South Africans aged 16–32 who reported being sexually active in the year preceding the survey, 32.4 percent or 3.5 million people correctly recalled the MSP animert (32.4 percent). Based on the PSM estimate, 3.2 percent of this group or 111,886 people avoided multiple sexual partnerships as a result of exposure to the spot.

Together, *Scrutinize, Tsha Tsha* and other high profile mass media offerings are beginning to shift social norms in South Africa.

Developing a Global Model

As the foregoing project sketches suggest, research and practice continue to evolve as they integrate individual, social, and structural factors into ecological frameworks like the Pathways™ to Health Competence. Programs like *Puentes* in Peru and *Aman Tirta* in Indonesia can mobilize communication resources to strengthen political and service delivery systems (including in some cases the private sector) in order to create an enabling
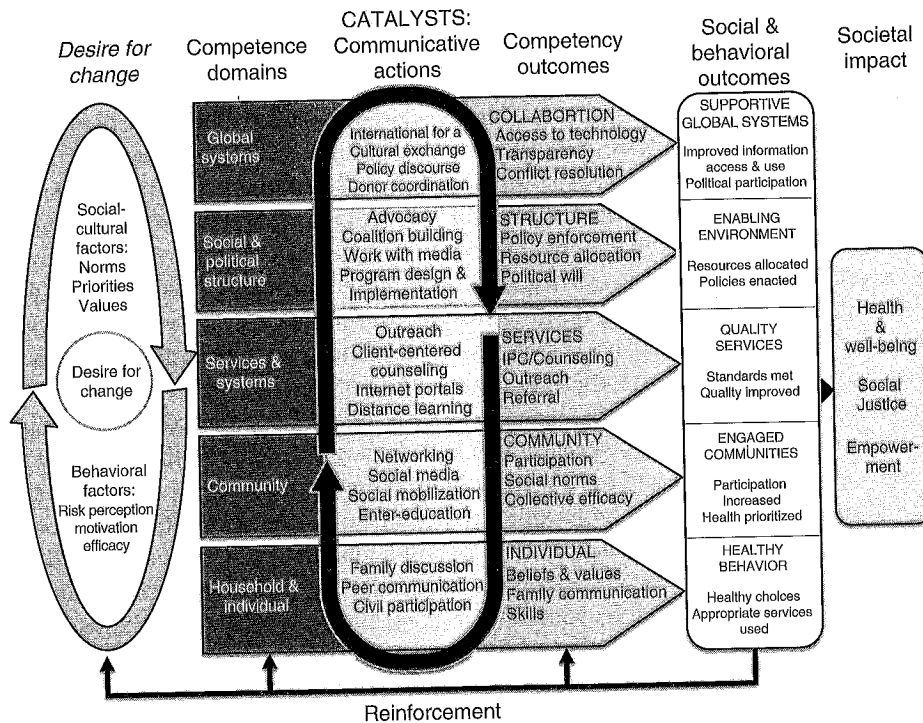
Figure 4.3   Global model of health communication and competence.
Source: Center for Communication Programs, Johns Hopkins Bloomberg School of Public Health.

environment. Communities can come together and work collectively for the common good of their members, to advocate for their needs, and to build mutually supportive partnerships with service providers. Local leaders and civil society organizations can use communication, as in *Puentes* and Egypt's CHL program, to advocate for policy change and program support, build coalitions, conduct and support outreach, monitor public health conditions and needs, network with like-minded groups, and design, implement, and evaluate health communication activities. Families, as in Egypt's CHL program, can be involved to set health priorities consistent with their family life-stage and work together to seek and use the services they need. And projects like *Tsha Tsha* and *Scrutinize* can use mass media to catalyze public dialogue and interpersonal communication in order to shift behavioral norms and generate cultural change.

However, while the Pathways™ model is a useful and dynamic guide to theory and practice across countries and programs, it is becoming clear that the missing level of analysis at this stage of evolution is the global one. Figure 4.3 is our attempt to introduce this global level into existing ecological thinking. At the far left of the model, we place the engine that drives all social development efforts: the desire for change. Societies, communities, service delivery systems, families and individuals tend to have an inherent desire to improve their lives, but often face resistance or obstacles that leave them complacent about the status quo, discouraged about opportunities for improvement, or actively

opposed to social, political, economic or behavioral change. The Pathways™ model needs to account for the initial level of desire for change and work from that starting point to increase health and wellbeing, expand social justice and foster empowerment.

Fresh desire for change can originate at any level in the system, sometimes coming from the top down and sometimes from the bottom up. Desire for change can be sparked with communication, which expresses aspirations and creates *demand* by shifting perceptions of risk and efficacy at the individual behavioral level and norms and priorities at the socio-political and cultural level. When people *want* change they will allocate resources, enforce policies, provide better services, participate in community processes, demand equity, and choose healthier practices. Merely desiring change, however, does not ensure that progress will begin or continue once it has started. The arrows circulating around the Desire for Change in Figure 4.3 indicate the importance of reinforcement across levels of social organization, including at the global level. As change efforts begin–in the form of initiatives addressing Millennium Development Goals (see United Nations, 2010), for example – global, national and local stakeholders must *learn by doing*, from the earliest planning phase through implementation, monitoring, and evaluation, so that experience with results-oriented communication becomes embedded in communities of practice.

In Figure 4.3, the horizontal grey arrows represent the five communication Competence Domains that are essential to the success of evidence-based social and behavior change communication initiatives at scale. The light grey vertical column in the center represents five levels of Communicative Actions that catalyze and result in more Competent Outcomes at global, national, service delivery, community, and household levels. Dynamic arrows encircle the Communicative Actions column, suggesting how actions at the various levels can reinforce each other. Strategic communication programs work hard to optimize such reinforcement across levels so that competence is enhanced system-wide.

Global competence is characterized by transparency in international relations and committed efforts to avoid and resolve conflicts between nations as well as among national populations, national governments, and transnational organizations. Examples include a committed effort to join forces when health is threatened, such as the global efforts to prevent avian and pandemic influenza or to provide timely support for emergency relief efforts after an earthquake or tsunami. Public and private entities can collaborate to avoid overexploitation of natural and human resources worldwide, prevent human trafficking, and ensure optimal access to and use of communication and other technologies in the public interest. These competencies result from broad-based participation in international fora for cultural exchange and policy discourse, and through websites and the use of innovative technologies such as GPS resources and satellite imaging that can track and monitor disease. Donor agencies, the private sector, and philanthropic foundations can coordinate their efforts to minimize redundancy and avoid reinventing the wheel, support and promote proven methods and program approaches, and direct resources to programs, issues, and geographic areas where need is greatest, based on evidence. When these and other factors are in place, the result is Supportive Global Systems.

Political Competence is characterized by such things as appropriate formulation and enforcement of health policies, sufficient allocation of resources to systems development and functioning, and the political will to address health challenges in the first place. It is primarily at this level that national structures and institutions must deal with international

and transnational forces that influence priorities and access to and investments in health programs, communication technologies and other development resources. Changes in health competence at the political structural level can shift development priorities for the greater good, respond to or influence public opinion, increase media coverage of and support for specific health issues or programs, improve access to resources, strengthen partnerships, and raise national levels of collaboration and participation in health improvement. Communication advocacy directed toward the media or opinion leaders (e.g., legislators) can build support for health policy changes or increased budgets, or strengthen political will to address controversial or difficult issues. Advocacy by community or activist groups can serve to publicize concerns or draw municipal attention to health problems. Communication within and among organizations can enhance coordination and build or mobilize coalitions around health improvement efforts or result in consensus around a national communication strategy. When these and other factors are in place, the result is an Enabling Environment.

Service Competence is characterized by such things as systematic client-oriented outreach, coordinated referral systems, and the correct use of technical skills including interpersonal communication and counseling (IPC). Within the *Service Delivery* domain, a great deal of communication occurs among providers and between clients and providers. Health service systems need to communicate norms and standards of practice, and provide rewards, incentives, and training to personnel. Information and job aids that health workers need for their work must be provided, and workers must be trained to use them effectively, perhaps through distance learning or interactive media such as mobile phones that are now being used to link health practitioners to high-quality professional resources and personnel at a distance. Health workers themselves must communicate effectively with clients, sometimes in facility-based venues, sometimes through outreach. These kinds of communication extend the availability of quality services, improve the technical skills of personnel, and improve the effectiveness of information delivered to and interactions with clients. Communication at this level can also improve coordination or integration among services, including referral and follow-up systems, resulting in increased and more effective use of quality services by clients. When these and other factors are in place, the result is the availability and delivery of Quality Services anywhere they are needed.

Community Competence is characterized by such things as participation in health improvement efforts by members of the community, the expression of positive social norms around health behaviors, and a collective belief in the community's ability to tackle health challenges. At the community level, many types of communication play a role. Interpersonal communication related to health among community members within social networks, peer groups, and the family can be encouraged or facilitated. Sometimes interpersonal contact with change agents or outreach workers provides links between the community and service domains. Mass and interactive media can provide information on demand, connect people with each other, stimulate reflection and dialogue, arouse emotions, model behaviors, and motivate action, including service utilization or advocacy for better services. Various communication strategies from social marketing to entertainment education to web-based messaging and, now, social media can play a role. Health competence outcomes of such communication can include more equitable access to information within a community,

increased opportunity to participate in local health-improvement efforts, more community dialogue (if not consensus) around health priorities or other social issues, expanded or strengthened networking and collective efficacy, and increased commitment to health improvement by community leaders – all outcomes related to social capital. When these and other factors are in place, the result is Engaged Communities.

Individual Competence is characterized by such things as a belief in the value of good health as something worth pursuing, the practice of open and honest family communication about health and how to achieve it, and self-confidence in one's ability to achieve desired health outcomes. Many familiar individual-level outcomes also result from health competence communication at this level: recall of relevant health information, knowledge of health determinants and practices (health literacy), shifts in or reinforcement of health beliefs and attitudes, change in perceived risk or improved emotional coping with perceived threats to health, increased perceptions of social support for difficult health practices, reduced stigma attitudes, and increased self-efficacy. Improvements in these health-competence outcomes increase the likelihood of positive health behaviors related to hygiene, reproductive health, safe pregnancy and delivery, child feeding and immunization, and prevention of infectious diseases. When these and other factors are in place, the result is more Healthy Behavior, including appropriate and timely Service Utilization.

While it is unlikely that any one program could – or would even try to – address all of the elements described in the Global Model of Health Communication and Competence, most programs that produce measureable change in health status work holistically to at least some extent, addressing multiple levels of competence and employing multiple modes of communication. Research must inform decisions about what to address and how, helping planners choosing the combination of levels, paths, and strategies that are most likely to result in program objectives, given available program resources.

Advances in communication technology, especially newer mobile technologies and social media, and the democratization of their use – while not perfect – have dramatically improved prospects for effective health communication globally. In addition, the emergence of health issues like pandemic influenza and grand-scale environmental disasters with global impact, as well as more frequent international calls for a global response to issues such as HIV/ AIDS, malaria, nutrition, and perinatal mortality, increase the need for a global theory of health behavior and social change. In this chapter we have described an evolution of theory and research that can help us conceptualize a new generation of ecological approaches to health communication and behavior. A global theory is possible if we continue to seek the elusive opportunities for cross-national comparative research, be systematic in our use of theories and research methods at the national and sub-national levels and honor the empirical obligations of our discipline. Evolution proceeds through replication with variation.

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