

BIOGRAPHY

CONTRIBUTIONS OF EVERETT M. ROGERS TO DEVELOPMENT COMMUNICATION AND SOCIAL CHANGE

Arvind Singhal

“We envy his [Everett M. Rogers’] productivity. We are grateful for the many ideas he originated and research breakthroughs he directed (Clarke, 2006, p. 11-12).

Farm Boy to World-Renowned Diffusion Scholar

Born on March 6, 1931 on the family farm in Carroll, Iowa, USA during the Great Depression in the U.S., Ev Rogers’ early years were marked by hard economic times. After attending a one-room school during the day, the young Ev was tasked with multiple after-school chores such as feeding hogs, greasing farm machinery, and milking cows. This daily hard work ethic that Rogers learned early on an Iowa farm was to define his life-journey, shaping his professional life as a teacher, scholar, and researcher (Table 1). Industrious, productive, and prolific, Rogers authored 37 books, 180 journal articles, 140 book chapters, and some 150-research reports in his five-decade career. These publications influenced the field of rural sociology, development communication, international development, social marketing, public health, and others. It would not be an exaggeration to say that few individuals have had a more profound and as sustained an effect on the field of communication and social change as did Ev Rogers. Perhaps that explains late Mr. Bashar’s interest in inviting a piece on Professor Rogers some 12 years after his passing in 2004.

Though initially not interested in pursuing a college education, Ev Rogers, thanks to the encouragement of a High School teacher, enrolled at Iowa State University for a degree in agriculture. In those years, ISU had a great intellectual tradition in both agriculture and in rural sociology. Numerous agricultural innovations were generated by scientists at Iowa State, and rural sociologists, notably George Beal, who later advised Rogers’ MA and Ph.D.

theses, were conducting pioneering studies on the diffusion of agricultural innovations—high-yielding hybrid seed corn, chemical fertilisers, and weed sprays. Questions were being asked about why do some farmers adopt these innovations, and some don't? Why are some more innovative than the rest?

Table 1: Key Events in Ev Rogers' Life

Date	Events
March 6, 1931	Born, Carroll, Iowa.
1944 - 1948	Carroll High School, Carroll, Iowa.
1948 - 1952	Iowa State University, Ames, Iowa, B.S., Agriculture.
1952 - 1954	United States Air Force, Second/First Lieutenant, Korean War.
1954 - 1957	Iowa State University, Ames, Iowa, MS and Ph.D., Rural Sociology.
1957 - 1963	Assistant Professor and Associate Professor of Rural Sociology, Ohio State University.
1962	<i>Diffusion of Innovations</i> (First Edition) published by Free Press.
1963 - 1964	Fulbright Lecturer, Faculty of Sociology, National University of Colombia, Bogotá.
1964 - 1973	Associate Professor and Professor of Communication, Michigan State University.
1973 - 1975	Professor of Population Planning in the School of Public Health, and Professor of Journalism, University of Michigan.
1975 - 1985	Janet M. Peck Professor of International Communication, Institute for Communication Research, Stanford University.
1981	Fulbright Lecturer, French Press Institute, University of Paris, Paris, France.
1985 - 1992	Walter H. Annenberg Professor of Communication, Annenberg School for Communication, University of Southern California.
1991 - 1992	Fellow, Centre for Advanced Study in the Behavioural Sciences, Stanford, CA.
1993 - 2004	Professor and Chair, Regents' Professor and Distinguished Professor, Department of Communication and Journalism, University of New Mexico.
1996	Ludwig Erhard Professor, University of Bayreuth, Bayreuth, Germany
1998	Wee Kim Wee Professor of Communication, School of Communication Studies, Nanyang Technological University, Singapore.
1999 - 2000	Visiting Professor, Centre for Communication Programmes, School of Hygiene and Public Health, Johns Hopkins University.
2000 - 2001	Nanyang Professor, School of Communication Studies, Nanyang Technological University, Singapore.
2004	Distinguished Professor Emeritus, Department of Communication and Journalism, University of New Mexico.
October 21, 2004	Died, Albuquerque, New Mexico.

Source: Ev Rogers' Curriculum Vitae

Ev Rogers was intrigued by these questions because back on the family farm, he saw that his father loved electro-mechanical farm innovations, but was highly resistant to adopting biological-chemical innovations. Rogers Sr. resisted adopting the new hybrid seed corn for eight years, even though it yielded 25 percent more crop, and was resistant to drought. During the Iowa drought of 1936, while the hybrid seed corn stood tall on the neighbours' farms, the crop on the Rogers' farm wilted. This finally convinced Rogers Sr. to adopt the innovation. From his father's reluctance to adopt biological and chemical innovations, even though they brought monetary benefits, Rogers grasped that adopting innovations was not just a rational economic decision. More influential seemed to be the opinions of neighbouring farmers, especially those that his father respected. Adopting innovations seemed to be a social and communicative process, involving exchange of ideas, persuasion, and personal influence. These social aspects of innovation diffusion formed the basis of Rogers' graduate work at Iowa State.

Completed in 1957, Rogers' doctoral dissertation was a diffusion study of 155 farmers in Collins, Iowa, focusing on the adoption of a dozen or so agricultural innovations. Rogers' dissertation committee were especially intrigued by his review of literature chapter because in codifying and systematising hundreds of diffusion studies of all kinds of innovations—agricultural, educational, medical, and marketing, Rogers found many similarities: Innovations tend to diffuse following an S-Curve of adoption; that the most innovative teachers, doctors, and farmers were more cosmopolitan, more connected. This review of literature chapter, greatly expanded, became the basis for Rogers' 1962 book, *Diffusion of Innovations*. The book abstracted a general model of diffusion based on empirical work from various disciplines (Chaffee, 1991; Dearing & Singhal, 2006). His opus provided a comprehensive theory of how innovations (not just agricultural innovations) spread in a social system.

Ev Rogers was a 30-year old Assistant Professor of Rural Sociology at Ohio State University when the diffusion book was first published. Although young in years, his reputation as a diffusion scholar was rising rapidly in the U.S. mid-West and nationally. The publication of the diffusion book would catapult it to the world stage. Why so? The book's timing was uncanny, and its appeal was global. In the 1960s, national governments of newly independent countries of Asia, Africa, and Latin America were wrestling with how to diffuse agriculture, nutrition, education, and public health innovations. The newly published book provided a useable framework for communicating such development innovations in order to spur adoption.

Widespread Application of Diffusion of Innovations

To fully appreciate the value of Rogers' five decades of scholarship on the diffusion of innovations one must recognise that diffusion was one of the few social theories that persuasively linked macro, meso, and micro-level social change phenomenon. Consequently, its macro, meso, and micro-generalisations held immense heuristic value for field-based application.

Rogers defined *diffusion* as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). An *innovation* is “an idea, practice, or object perceived as new by an individual or other unit of adoption” (Rogers, 2003, p. 12). Diffusion research is distinctive from other kinds of communication research in that the messages are perceived as *new* by the receivers. In communication research that is *not* the diffusion of innovations, the messages are usually expected, familiar, or anticipated. This novelty in the diffusion of innovations necessarily means that the source of the message must be more knowledgeable and more expert than the receiver. That is, by definition, diffusion represents an intercultural encounter involving heterophilous (or dissimilar) individuals. Further, the individual who perceives the idea, object, or practice as new experiences a high degree of uncertainty in seeking information about, and deciding to adopt an innovation (Rogers, 2003).

Diffusion of innovations theory gained widespread popularity because it provided a basis to understand how social change occurred i.e. through the adoption of new ideas, objects, and practices by individuals, communities, and society at-large. Rogers' research and writings helped to greatly enhance our understanding of how the macro process of system change was linked to micro (individual and group) level processes. Marketing scientists, epidemiologists, sociologists, demographers, and political scientists embraced the macro system-based perspectives represented, for instance, by a logistic S-shaped diffusion growth curve (Dearing & Singhal, 2006). Behavioural psychologists and interpersonal communication scholars were more taken by micro-level adoption decisions, including the role of personal influence in bringing about attitude and behaviour change. Rogers' scholarship showed both how micro-level units of adoption (individuals) was influenced by system norms, as well as how system change was dependent on individual action (Dearing & Singhal, 2006).

Ronny Adhikarya, who was a Fellow at the East-West Centre in Hawaii

in the 1970s (and later a Ph.D. advisee of Ev Rogers at Stanford University and subsequently a highly effective development official of UN-FAO and the World Bank), noted the global impact of Rogers' diffusion scholarship: "Between 1972 and 1977, I personally witnessed the widespread applications of diffusion theory in family planning communication programmes in 26 [developing] countries" (2006, p. 174). Diffusion theory, Adhikarya emphasised, provided insights on how to diminish the entrenched "tabooness" associated with family planning methods, making them more "talk able." It also brought attention to harnessing social networks in influencing adoption decisions.

In the past decades, Adhikarya and hundreds of other global, national, and local practitioners would apply the diffusion framework in designing and implementing communication campaigns for agriculture extension, population control, HIV/AIDS prevention, and environmental education. Rogers' writings on the different stages of adoption process and the characteristics of the S-curve would serve as theoretical guides for audience segmentation and targeted message design strategies. Diffusion theory was applied on many fronts: e.g. in small community-based groups to stimulate contraceptive adoption and in designing incentive systems for change agents (Rogers & Kincaid, 1981); in recruiting traditional midwives to reduce heterophony gaps between medical doctors and clients (Rogers & Solomon, 1975); in harnessing peer influences of social networks (Valente, 2006); in integrating mass and interpersonal communication channels (Singhal & Rogers, 2003); in piggy-backing onto other people's networks, a precursor to social marketing (Kotler, 2006); and in using small, folk, or traditional media with rural audiences, a precursor to the entertainment-education communication strategy (Singhal & Rogers, 1999; Singhal, Cody, Rogers, & Sabido, 2004).

Beyond Diffusion of Innovations

In an oral history interview I conducted with Ev Rogers, when I asked "how he could toil in the field of diffusion for so long?" he replied: "My one foot has been anchored in diffusion but I have hopped all over with my other foot" (personal interview, 2000, March 23). Table 2 summarises the widespread contributions that Ev Rogers made to the field of diffusion of innovations, communication networks, development communication, health communication, entertainment-education strategy, and international and intercultural communication.

Table 2: Contributions of Ev Rogers to the Field of Communication and Social Change

Primary Areas*	Conceptual Contributions	Key Publications
Diffusion of Innovations	General model of innovation diffusion; predictors of innovativeness; adopter categorisation	Rogers (1957; 1958; 1962; 1983; 1995; 2003); Rogers with Shoemaker (1971)
Communication Networks	Opinion leadership; personal influence; critical mass	Rogers & Beal (1958); Rogers & Cartano (1962); Rogers & Kincaid (1981)
Development Communication, Health Communication, and Entertainment-Education	Modernisation and development; family planning communication; health campaigns; HIV/AIDS communication; media agenda-setting; the entertainment-education communication strategy	Backer, Rogers, & Sopory (1992); Dearing & Rogers (1996); Rogers (1965; 1973; 1976); Rogers et al. (1999); Singhal & Rogers (2003); Singhal, Cody, Rogers, & Sabido (2004); Singhal & Rogers (1999)
International Communication and Media Systems	Cross-border television flows; comparative media systems; information revolution in developing societies; national audience surveys	Antola & Rogers (1984); Rogers & Balle (1985); Rogers et al. (1985); Singhal & Rogers (1989; 2001); Waterman & Rogers (1994)
Intercultural Communication	Homophile and heterophony; digital divides; equity gaps; intercultural history and founding fathers	Rogers (1999); Rogers & Bhowmik (1958); Rogers, Hart, & Miike (2002); Rogers & Steinfatt (1999)

*As one would expect, considerable overlap exists among and between Rogers' primary areas of contribution, conceptual explication, and publication.

Beginning in the mid-1970s, for instance, Rogers became intrigued by the potential of diffusing pro-social innovations through media characters in popular entertainment narratives. From a diffusion perspective, in contrast to educational media that garner a limited audience, entertainment media genres reached a wider more receptive (or less resistant) audience. Not only did soap operas and telenovelas (“television novels”) earn high audience ratings and thus were commercially viable, they were known to engender high degrees of audience involvement. Could this entertainment potential not be tapped more systematically?

When I began my doctoral programme at the University of Southern California (USC) Annenberg School in 1985, Rogers encouraged me to pursue this line of work. Our collaboration over the next two decades would be anchored in an area that came to be known as the entertainment-education (E-E) communication strategy (Singhal & Rogers, 1988; 1999; 2002). *Entertainment-education* is defined as the process of purposely designing and implementing a media message to both entertain and educate, in order to increase audience members’ knowledge about an educational issue, create favourable attitudes, shift social norms, and change overt behaviour (Singhal

& Rogers, 1999). While the E-E strategy, especially in its formative years, represented a theory-based extension of diffusion of innovations thinking, it has since evolved and expanded to become a more multi-disciplinary field of scholarship and practice that draws upon the arts and literature, the humanities, and the social sciences (Singhal & Rogers, 2002; Singhal, Cody, Rogers, & Sabido, 2004).

What are certain points of theoretical convergence between diffusion of innovations and entertainment-education? Diffusion research explained how mass media effects occurred through a two-step (or multi-step) process. Opinion leaders glean new ideas from the mass media and pass them forward to their followers through personal influence. Here an intermediary opinion leader plays a crucial role in diffusing new ideas at the level of the social system or community. However, was this intermediary opinion leader, in flesh and blood, always necessary? Research on social cognitive and social learning processes, notably by psychologist Albert Bandura (a colleague of Rogers at Stanford for a decade), had demonstrated that carefully crafted media role models could directly influence audience attitudes and behaviours without the need for influential intermediaries (Bandura, 1977; 1986; 2006).

By the mid-1970s, Rogers became aware of the pioneering work of Miguel Sabido, a producer-director-writer at Television, the Mexican commercial network, who established a theory-based framework for producing entertainment-education telenovelas. Sabido's framework was deeply anchored in Albert Bandura's theory of how audience members develop long-running emotional relationships with television characters, and learn from them. The 100 to 180 chapters in a typical telenovela allowed audience members to emotionally bond with the characters and identify with their aspirations and perseverance. They observe the consequences (rewards and punishments) that the models face and may be reinforced about what actions to take (or not take) toward improving their conditions (Bandura, 2006). Only in-house evaluation research on the effects of Sabido's telenovelas had been conducted in Mexico, and these studies had not found their way into the mainstream of communication science literature.

In my first semester of doctoral work 1985, Ev Rogers showed a three minute videotape of the popular Indian soap opera, *Hum Log* (We People), illustrating its purposive combination of entertainment and education as a means of promoting social change. I was intrigued. Within six months, Rogers and I secured a grant from the Rockefeller Foundation to conduct an evaluation of *Hum Log* (Figure 1).



Figure 1: Everett Rogers (left) and Arvind Singhal (right) in 1989 in Los Angeles.

Our research (Singhal & Rogers, 1988; 1989) showed that many *Hum Log* viewers felt that they knew the television characters, even though they had never actually met them, suggesting a high degree of parasocial interaction -- the seemingly face-to-face interpersonal relationships between a viewer and a mass media personality (Horton & Wohl, 1956). Many young women viewers wrote to Badki, a role model for gender equity, to tell her that she should resolve her indecision about marrying her boyfriend, Ashwini. The day that Badki and Ashwini got married in the television soap opera, shops and bazaars in North India closed early for the audience members to celebrate. My pre-dissertation research paper at USC, a multiple regression analysis of pro-social learning from *each of* the ten main *Hum Log* characters, indicated that viewers reported learning pro-social behaviours from characters of the same sex, age, and socio-economic status (Singhal, 1988). In diffusion parlance, a television character's homophile with an audience member significantly predicted their potential for influence.

From those early years of dabbling in E-E in the 1980s, today, a whole field of practice and research on entertainment-education has emerged, and a 2016 map of the world would show E-E almost everywhere. Ev Rogers deserves credit for seeing the potential vested in E-E scholarship and its practice, and in fostering global E-E applications that integrated social learning from mass-mediated characters with social diffusion theory (Bandura, 2006). He led many evaluations of the diverse personal and social changes fostered by this approach. Using experimental and control regions in E-E field experiments, and implementing controls for other possible determinants, Rogers and his colleagues verified the substantial impact of radio and television soap operas

on increased use of family planning services, adoption of contraceptive methods, and condom use to curtail the spread of the AIDS virus (Singhal & Rogers, 1999; Rogers et al., 1999; Vaughan, Singhal, Rogers, & Swalehe, 2000).

Working with Rogers in those early years of E-E, I had little idea how rapidly E-E would diffuse, evolve, and continually reinvent itself as a communication strategy (Singhal, 2013). Today, at any given time, highly melodramatic stories purposely portray people's everyday lives, helping viewers to see a better life and providing the strategies and incentives that enable them to take the steps to realise it (Bandura, 2006). While E-E serials continue to tackle complex social topics such as gender violence and equity, small family size, environmental conservation, AIDS prevention, racial harmony, and a variety of life skills, several new entertainment genres, riding on new digital platforms, are rapidly emerging on the E-E landscape (Wang & Singhal, 2009). Transmedia storytelling, E-E webisodes, and social media platforms (like Facebook, Twitter, and Instagram) provide new interactive E-E vehicles to connect audiences across vast distances (Sachdev & Singhal, 2015; Wang & Singhal, 2016). E-E Messages can now be highly tailored and targeted, and blogs and tweets can spur conversations on social topics in real and asynchronous time, in private and public, and in real and virtual spaces (Wang & Singhal, 2014).

Conclusion: A Celebration

Ev Rogers' life work represents a celebration at many levels. It is foremost a celebration of unbound scholarly curiosity, sustained over five decades, about trying to understand how social change occurs through the diffusion and adoption of new ideas, objects, and practices. In so doing, we celebrate a poor, Iowa farm boy with no aspiration to earn a college degree who became an internationally recognised global intellectual. We celebrate a doctoral student in rural sociology, who synthesised research findings from multiple disciplines to abstract a general theory of how innovations diffuse in social systems, establishing an entire sub-discipline within the field of communication, and further linking communication with disciplines of international development, social marketing, and public health. We celebrate a scholar, who theorised about macro, meso, and micro aspects of social change, providing a heuristic framework with remarkable potential for field-based application. We celebrate a sense-maker who remained solidly anchored in the field of diffusion of innovations, but who continually

deepened and extended his curiosity to other areas of development communication, entertainment-education, and international, intercultural, and health communication.

Further, accolades, recognitions, and distinguished professorships notwithstanding, Rogers' scholarly life was one of exacting humility. While his early scholarship on diffusion of innovations strengthened the postulates of the dominant modernisation paradigm of development, he was one of the first to admit the problems with the earlier models and theories in development and communication (Rogers, 1976). He redefined the meaning of development, moving away from the technocratic, overly materialistic, and deterministic models to include the notion of equity, active grassroots participation of people, self-determination of local communities, and an integration of endogenous and exogenous elements to address peoples' needs in their local environment (Melkote, 2006).

In summation, Ev Rogers life as a scholar of communication and social change was both keenly observed and lived.

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Arvind Singhal, Ph.D. is the Samuel Shirley and Edna Holt Marston Endowed Professor of Communication at the University of Texas at El Paso and also appointed as Professor 2, Faculty of Business Administration, Hedmark University of Applied Sciences, Norway.