

INTRODUCTION FROM
**SOCIAL NETWORKS and
POPULAR UNDERSTANDING
of SCIENCE and HEALTH
SHARING DISPARITIES**

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Introduction

In June 2012, the United States Supreme Court announced a milestone decision regarding health policy, upholding major tenets of the Patient Protection and Affordable Care Act (Affordable Care Act). The Act ensures increased access to health coverage for many Americans and introduces new protections for people with health insurance. Ironically, the ways that news about the Court's decision spread among people underscores the information inequality facing the nation. As this landmark decision was announced, many citizens learned about the news directly from television or radio reports or over the Internet. Despite prominent broadcast by media outlets, many other people first learned about the news from coworkers they passed in the hall or colleagues at a meeting who had happened to hear the news. Yet other people tried to make sense of the complex legal decision by talking with friends or family members. Some Americans, however, did not hear the details of the Court's decision at all that morning, and neither did anyone they happened to see that day.

Within hours of the Court's decision, some people were actively debating the nuances of the health care policy itself or forecasting the impact of the decision's framing on the 2012 presidential election. Others were able to solicit expert advice as to whether the decision had any direct impact on their use of health care services or on their pocketbook. Other people did not enjoy the benefit of chatting with neighbors or friends about what the decision meant. For some people, this lack of conversational focus on health policy was an active choice. Given the opportunity to talk about any topic during a work break, last night's sports scores or the latest celebrity scandal likely seemed much more appealing than the subtleties of an individual mandate to purchase health insurance.

For some people, however, forces had been set in motion prior to that morning that ensured that the social network in which they reside would not actively interact to share, discuss, or forward news about the Court's



decision. Chances are that those people went to sleep the night following the historic decision with little more than a vague awareness that something in Washington, DC, had happened that day involving President Obama and health insurance. The social amplification of understanding and opinion that quickly unfolded that day for some people left others relatively in the dark and undisturbed.

Polling conducted soon after the health care decision revealed the extent to which prevalent broadcast of health and science news does not necessarily result in widespread understanding. Within weeks of the Court's ruling, a striking gap in public understanding came to light. Nearly half of survey respondents were confused as to the basic facts of the decision. About one-third of respondents were unaware of the details of the case and about another 15 percent actually reported that the Affordable Care Act was overturned by the Supreme Court.¹ Many different factors likely produced that unevenness in understanding. One set of possible factors, nonetheless, involves the people with whom respondents interact (or do not interact) regularly. While *social network interaction* certainly cannot account for all aspects of this uneven state of knowledge, a dearth of health policy knowledge within a person's immediate network may contribute to this gap or to the echo chamber effect that polarized, ideologically charged network discussion may have had on erroneous interpretation of news coverage. Consequently, the importance of social networks is a main focus of this book.

The example of information sharing regarding the Affordable Care Act begins to show how the effect of social network interaction on information spread is not solely dictated by the sheer volume of information broadcast from a central source. In other words, social network interaction is not merely uniform rippling following a stone cast in the information pond. It appears that some ponds are more receptive than others; that is, some networks are primed to engage broadcast news, whereas others are not.

Consider a news example contemporary to the Affordable Care Act that may be, scientifically speaking, even more fundamental and profound as an advance in human knowledge: the announcement in summer 2012 of evidence consistent with the existence of the Higgs boson, what many journalists dubbed the "God particle."² The discovery generated substantial news coverage in Europe and around the world. Subsequently, some social networks simmered with not only general references to the news but also jokes and puns and commentary. An example that bounced around Facebook involved a Higgs boson disrupting a Catholic church service exclaiming, "Wait! You

can't have mass without me!" The sum effect of such simmering likely kept the news salient for many people. However, without a basic background in physics or access to colleagues who had one, other people apparently did not witness much social interaction regarding the topic at all.

Discussion Goals

One goal of this book is to document gaps between groups of people in their tendency to share information about health and science. Documenting such disparities is important to correct popular misperceptions regarding the free and unfettered flow of information that supposedly abounds in the present moment. Pundits and scholars talk about the emergence of the information age in the 21st century.³ Central to such conceptualizations is the grand promise of peer-to-peer sharing. That is, instead of living in a *one-to-many* broadcast era, we live in an environment in which information can be expressed from *many to many* 24 hours a day. But the inference that all are sharing equally in this feast does not entirely jibe with empirical reality. While some celebrate the potential of social media and other new peer-to-peer connection technologies for teaching people about science and health in this century, enthusiasm about peer-to-peer information flow requires important caveats. Rather than encouraging equity in what we all know and think about scientific discoveries, household consumer tips, the latest health recommendations or opportunities for medical services, systematic reliance on social networks to spread information may be a recipe for inequity.

As delineated in these pages, an increasing body of research suggests that people are not equal in their tendency to share information with others around them. In general, people do not take advantage of the chance to share ideas with others, a paradox in our current era of apparent information abundance. But it also appears that some people are much less likely than others to share information. Some of the differences in peer-to-peer sharing represent inequity in that information sharing is constrained unjustly by factors outside of a person's immediate control. This book explains why these information-sharing patterns appear to persist, why it matters to society, and what, if anything, can be done to address these tendencies.

This exploration is relevant to everyday citizens as well as to those involved in public policy debates about the appropriate tools for large-scale educational efforts in a variety of topical domains. The book also will appeal to social science students interested in the role of social networks in explaining information diffusion. Additionally, this is a cautionary tale for communication

practitioners, such as informal education specialists or health promotion professionals, interested in leveraging social ties as an inexpensive method to spread information.

Our discussion will focus specifically on information about human health and other large-scale scientific research funded and conducted at an institutional level, given that popular understanding of those areas of knowledge can impact both individual well-being and collective decision-making about public policy. At the same time, we can learn a great deal from social science research on information diffusion and engagement related to other (not entirely distinct) topics, such as politics and popular culture, and consequently also will draw in that evidence where appropriate. Focusing the discussion in this way does not imply that health and science are unique in being vulnerable to information-sharing disparities, though the preponderance of highly specialized knowledge in these domains and Americans' performance on knowledge assessments⁴⁻⁶ do suggest that these topics are especially relevant for consideration of social networks and information flow.

How This Book Is Structured

The structure of the book is fourfold. In Chapters 2 and 3, I discuss evidence that gaps in information sharing exist and describe different types of information-sharing activities (such as face-to-face conversation and electronic message forwarding) in which such disparities should be evident theoretically. Then it will be important to extensively consider *why* information-sharing differences occur and to address the potential need for remedies.

In Chapters 4 through 6, I describe a series of relevant studies and explanations for information-sharing and information-spread disparities. Almost any difference between individual people could be noteworthy from a communication strategy perspective. However, as we will see, some of the reasons people may be unequal in their propensity to share information with others will be both logical and yet, to some observers, unremarkable from an ethical perspective. As I will discuss, the fact that some people harbor personality traits that make them less outgoing may not be cause for concern about their reduced tendency to pass along news that they see on television to other people. Other factors, though, will suggest discrepancy between the well-being or preferences of people and what happens in reality that reflects potentially avoidable structural barriers to sharing or receiving truthful and useful information from peers. For example, people in a neighborhood may all benefit from information about environmental harm being caused by a local

factory, but the lack of established connections between neighbors may reduce the spread of news that one person in that neighborhood happens to receive about that harm. That latter pattern, relative to information sharing that we might witness in a more socially connected neighborhood, may trigger a sense of injustice or at least cause for concern.

In Chapter 7, I engage the question of why we should worry about such disparities from an ethical perspective and at the same time acknowledge the critique that some types of inequalities likely matter more than others. Admittedly, the discussion will not consistently highlight reasons for information-sharing differences that warrant alarm. Not all of the discussion will focus on inequity; some of what we will witness simply holds practical implication for outreach that relies on peer-to-peer information campaigns. Nonetheless, some readers also will find other examples that do signal need for intervention.

Finally, in Chapter 8, I describe what, if anything, can be done to address these patterns of information sharing.

Acknowledging Disparities in Information Sharing

By considering a range of our daily interactions with other people, we can start to understand how it is that two people may have roughly an equal chance to see a particular story on the morning television news and yet, over the course of a day, may end up with very different knowledge, beliefs, and behaviors relative to the topic of that story because of the influence of others around them. It is important to note that, as I will discuss in Chapter 2, anyone with access to the Internet now has access to a wealth of information relative to people living in earlier centuries. Technical access, however, is not equivalent to routine engagement. Here the discussion will focus on social interactions and the way that interpersonal information sources supplement (or do not supplement) the stream of information people choose (or are able) to engage on their own in listening to or viewing mass media outlets or subscribing to information services in isolation from other people.

By focusing on information sharing between people, we will see why some types of information are simply more likely to be shared than others, regardless of individual differences between people. We also will explore how it is that some people simply never get exposed at all to otherwise seemingly prominent information. Research has started to point to a number of reasons why people have different routine interpersonal experiences when it comes to information about health, science, and myriad other topics. We can take stock of that

research and related theory and see that it forecasts a society in which the mere broadcasting of a message is not sufficient to guarantee information equity across all people.

People have sought and obtained information from a variety of sources for thousands of years; before television there was the town crier, and people have been talking to one another as long as there has been human speech. Throughout hundreds of years of mass communication history, some people have been more connected to the latest developments in human health and scientific research than others, at least partially because of well-informed people that they know who share information with those in their social circle. What is striking about the present moment, however, is that many people believe communication technology offers great democratic promise that can help overcome some of the disparities that have divided us. But as we will discuss, we are far from enjoying universal access to new communication technologies^{7,8} and even increased access to those technologies will not automatically overcome the network tendencies of human groups in which some tend to be more connected than others. A central paradox ultimately will animate this discussion: the notion that while we live in a world that is awash in information and increasingly filled with exuberant references to “social networks,” the very network infrastructure that stems from our social nature can lead to the reification and amplification of disparities between people with each new release of information into the system.