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**Case No. 5, Day 1**  
**Date Due:** 101101

**Learning Objective:** Analyze the process of changing beliefs, understanding, new knowledge, and acting upon it

**What does our understanding of epistemology, paradigm shifts, and social movements tell the public health field about advancing new public health ideas into meaningful action?**

**Abstract:** The philosophical field of epistemology, the Greek word for the “science of knowledge,” explains how people gather knowledge and derive an understanding of the world.<sup>1</sup> As the history of science has shown, revolutionary changes in thinking based on individual and collective bodies of knowledge do not emerge quickly or orderly. They come about when current systems of thinking break down because old views can no longer explain phenomena and fail to resolve problems. Efforts to approach health problems in the United States through costly, curative models of care and changing individual behavior may represent outdated thinking, but it is not clear if a paradigm shift that calls for more health interventions to address social determinants of health (SDOH) will occur. Dynamics of how social movements that challenge traditional health or social policy, particularly in the context of the historic U.S. political process, reveal that lasting political or economic change may not happen given the power of entrenched interests and the nature of the political system.

Since landing a job, our health educator has explored how profit-driven health care focused on costly curative solutions, as practiced in the United States, is not making Americans healthier. Americans are spending \$2.3 trillion annually on health care, yet have shorter lifespans, higher infant mortality rates, and less access to health care than most modern industrial democracies.<sup>2</sup> Our educator tried activities and communications tools to explain that the health of individuals is greatly determined by a person’s living environment, race, social standing, socioeconomic status, and education—and learned such strategies must acknowledge how different groups receive messages. The educator also has learned about the Barker hypothesis, which has shown that costly chronic diseases are linked to the preconception to early childhood years,<sup>3</sup> though these findings have not translated into changes in health care delivery in the United States.

Less clear is whether messages about the SDOH can resonate in a climate that has successfully tarred the Obama administration health reforms as quasi-socialism. Is there, as John Kingdon notes in his study of agenda and change, a policy window opening when the streams of problems, policy proposals, and politics can be packaged and become part of a decision agenda at the highest level with Congress and the White House?<sup>4</sup>

How individuals think about health, as a personal matter or as part of a larger web of factors affecting all persons, is strongly driven by each person's knowledge base and how they process information. As seen with the Robert Wood Johnson Foundation's research on SDOH communications, different groups process information in different ways, and most Americans do not view health in social terms.<sup>5</sup> In political contexts, a large body of research has tested that people accept information that is consistent with their political values, embracing selection perception when it helps process data—meaning one interprets things like news to conform to existing views.<sup>6</sup> Thus, a key issue driving efforts to improve the nation's health ultimately concerns the philosophical field call epistemology, which addresses the nature, origins, and limits of human knowledge.<sup>1</sup>

**Epistemology and Health:** Schools of thought divide the epistemology field:

- **Empiricism** holds that knowledge comes from the senses and introspection.
- **Rationalism** ascribes basic beliefs to rational intuition, or *a priori* knowledge.
- **Objectivism** holds that reality exists independent and separate from the mind.
- **Constructivism** claims that understanding, such as scientific knowledge, is created by scientists and is not found in the world. Constructivists claim humans make or construct their own knowledge based on their experiences and individual ideas are not true or false.<sup>7</sup>
- Numerous other schools of thinking also attempt to get at this larger issue of human understanding and beliefs, such as contextualism and skepticism.

The proliferation of ways of knowing raises the issue that humans cannot claim to have genuine knowledge of any subject, medical or other. If true, we cannot agree what is the best way to arrive at true understanding. However, constructivism does allow for a way to understand medicine and science, though the pedagogic and scientific communities are at odds how sound this approach is in the application and teaching of science. This paper briefly will focus on the application of the constructivism approach, as it applies to how change occurs within the field of science.

Russell Hardin proposes an “economic theory” of knowledge, assuming it is a resource, with costs for acquiring it. Hardin claims the bulk of our knowledge is generated by our social system. We “take inordinately much knowledge on little more than blind faith,” he says, and we seldom test our beliefs. Society also places great faith on specialists to help it determine what is useful knowledge on most

matters. Specifically, the collective production of medical knowledge involves large amounts of data most people do not understand because of their limited knowledge, and thus they cannot rely on their own experience to judge medical matters. What's more, medical knowledge has high public interest because it has greater value to people personally, so people will invest in that knowledge because it impacts their lives, even though they may not fully understand how truth is determined.<sup>9</sup>

**Paradigm Shifts:** In our case, our health team wants to know when policies could succeed and bring about social change. Several useful change models related to knowledge acquisition have relevance. The science historian Thomas Kuhn proposes that “paradigm shifts” explain how revolutions of scientific thinking take place. This has become one of the most widely understood multi-disciplinary terms, and it has shaped how knowledge elites and scientists understand change in science and other disciplines.<sup>10</sup> In his book *The Structure of Scientific Revolutions*, Kuhn proposes that science is grounded in foundation beliefs, or paradigms (a constructivist approach), that help the scientific community pursue inquiry, test theories, and create meaning. Schools of thinking emerge that beat out others to help explain the facts confronted by research. But paradigm shifts occur during crises, when anomalies cannot be explained. A new paradigm emerges when the old ways cannot solve the new problems, though change will be resisted by the established community.<sup>11</sup> This occurred when the Copernican model of the universe and Newtonian physics replaced the Ptolemaic model in the 1500s and 1600s. Most resistance will dissipate when advocates can demonstrate that the new paradigm will tackle problems the last one did not.

**Knowledge to Action:** Getting back to the case, we have outlined how people gain knowledge—truthful or not—and medical knowledge in particular. But, have the interest groups and social movements concerned about public health issues reached a point where there are sufficient anomalies that challenge the dominant paradigm of profit-driven health systems. If so, what mechanisms exist to promote change, and what do past examples show how transformation occurs with thinking and policies.

Social theorists note that grievances and desires for change can be held by groups for long times without action. The actual knowledge of issues is less important than how groups of persons act based on the knowledge.<sup>12</sup> Usually, only a small portion of people who support the values of an organization will join it, and only if there is a network tie. All social movements, however, require a set of opinions or beliefs for changing some elements in the social structure or rewards system of society.<sup>12</sup> Resource mobilization theorists note that the crucial element is whether those with a grievance organize and mobilize for change, and these theorists focus on how those resources are utilized by these actors.<sup>12</sup>

Constance Nathanson's study of anti-tobacco and gun-control efforts in the United States shows that social movements organized around health threats have an active place in American life. Such grassroots efforts often benefit from elite allies—usually white, middle-class constituencies—and can take advantage of what she calls “political windows of opportunities.”<sup>8</sup> But often cultural change can be accomplished easier than true social or economic change. In the case of anti-smoking efforts from the 1970s on, the message benefited by appealing to liberal sympathies and to conservative advocates who supported “individual responsibility” for health. Importantly, she notes that a health movement's success in the policy and public arenas “may be only tangentially related to the scientific importance of its public health message.”<sup>8</sup> Peer pressure may prevail when science-based messages do not.

In reviewing the success of one the most successful U.S. social movements, the Townsend movement of the 1930s, Edwin Amenta et al. argue movements must be strong organizationally and in the political system to win recognition and benefits for their supporters. Dr. Francis Townsend proposed during the Depression that all Americans over 60 receive \$200 every month. His group mobilized a massive constituency with up to 1.5 million members that partially succeeded at the state and federal levels. It was a transformative idea. The movement pushed 23 states by 1935 to adopt old-age pensions and spurred Congress and the Roosevelt administration to pass the Social Security Act the same year, though it was less generous than sought in the Townsend Plan. However, the

movement succeeded because the system was open to change, with a party in charge that favored labor-style politics, and the elderly were a “desirable constituency.”<sup>13</sup> Political conditions were crucial also, even with a well-organized movement with a charismatic leader. Amenta et al. conclude that the nation’s party system, and the expanding role of campaign money in American politics, will make it difficult for future movements to achieve more than partial victories.<sup>13</sup>

Finally, Malcolm Gladwell’s model in his book *The Tipping Point* suggests that ideas that have big effects occur like epidemics and spread like wildfire. Equilibriums are tipped and sudden change occurs quickly. Often social epidemics, like a fashion trend, occur suddenly.<sup>14</sup> Social epidemics, notes Gladwell, are driven by exceptional, influential people. A charismatic leader with a strong idea, like Dr. Townsend, fits that mold. With entrepreneurial leadership, ideas can effectively stick and become more contagious, even with relatively few adherents.

**Back to the Case/Questions:** Though health care matters to most people, their understanding of medical matters can be based on knowledge they do not fully understand. Given that the health sector represents one-sixth of the nation’s economy with enormous clout at all levels of government, shifting people’s views that health is more than health care would appear to constitute a paradigm shift. Though social movements addressing health care can move ideas to action, there appears to be no modern-day, well-organized Townsend movement or exceptional leaders on the national stage focused on the SDOH. With its telegenic leaders like Sarah Palin and Rand Paul, the Tea Party movement, which opposes further government involvement in social and health policy, should be viewed as the most visible contagious movement on the American stage shaping the public’s awareness of health care policy.

*1. The World Health Organization’s 2007 report on taking actions to address the SDOH called messaging on the topic a “wicked problem.”<sup>15</sup> Does the nature of how people process information prevent this complex idea from ever being understood?*

*2. Do you agree that the paradigm shift theory can be applied to how those in the health care sector view this mammoth \$2.3-trillion-a-year industry, and at one point will change ultimately occur?*

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