An Analysis of Actors in the Nutrition Policy-Making Process

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An Introduction to Nutrition

Information overload is defined as the inability to make personal decisions because of excessive sharing of contradictory information. In the last several decades, there has been explosive growth in the ease of access to published studies discussing the proper way to be physically, emotionally, and mentally healthy (Garza et al., 2019). Media reports of new studies that contradict currently held beliefs reduce Americans' ability to confidently take action to best be nutritionally healthy. For example, in the last two decades, several diets have become the central standard, recommended by health agencies, only to be later replaced by newer practices which overwrite the effectiveness of previous recommendations (Lang, 2005); this confuses overloaded Americans who often feel a lack of constancy.

In order to best educate citizens, this paper seeks to explore the many factors that go into developing nationwide nutritional guidelines. Specifically, this paper focuses on investigating the factors that affect nutrition policy-making in order to discover how the research-to-guidelines process can be better understood by everyday citizens. Using the Actor-Network Theory (ANT) framework, this paper studies several different actors in the policy-development process and communicates their effects with the process and each other to the consumer. By visualizing this topic through this relationship-oriented lens, this paper claims that analyzing the actors' interactions will reveal key insights about the nutrition policy-making process in the United States.

Nutrition Policy Research Question and Methods

What are the factors and motives that affect the nutrition policy-making process, including research, development, consensus, regulation, and guidelines?

This research question stems from the desire to describe an information process that is critical to everyday citizens' health, as well as clarify the muddled, complicated world of nutritional science guidelines. In order to best answer this question, this paper analyzes the different actors in the nutrition policy-making process. Analysis occurs in the form of documentary resource methods, which involve reading and exploring published literature by a wide variety of experts in nutrition science, policy-making, research communication, and lobbying. Most of this literature was conducted through online scholarly article searches, using keywords like "nutrition policy," "health guidelines development," and "nutrition policy lobbyists." These articles provide relevant results that support the strong ties between actors and policy. Furthermore, this paper uses network analysis to analyze the relationships all of the actors have on each other and on the policy-making process. Such analysis aligns neatly with the ANT framework, thereby serving as a useful information gathering tool and appropriate organization method.

Nutrition Policy Background Information

Nutrition policy-making is the development of broad, uniform, national guidelines that seek to establish rules and patterns for citizens to follow in order to be physically, mentally, and emotionally well. These policies are usually established by the United States Department of Agriculture (USDA) and are updated every five years (Fogli-Cawley et al., 2006). Guidelines are a culmination of nutrition research, case studies, policy development, pilot programs and

previous health legislation (Fogli-Cawley et al., 2006). Through every five year cycle, the guidelines are updated in a process that relies extensively on new scientific research, submitted commentary from individuals and industry, and federal advisory committees ("Dietary Guidelines for Americans"). After extensive deliberation, new, modern guidelines are established that build off of previous recommendations.

As with any complex policy, there are an enormous number of actors in both the pre-development and post-development process; it is these vying actors that Americans are often unaware of and are thus a potential source of misinformation and confusion. For example, nutritional science research, the earliest step in that long chain of development, is an extremely thorny research area, given the human body's complexity and the difficulty in measuring long-term reactance to a single set of causes. Such complexity of this originating actor itself inhibits the development of universal guidelines for people to live healthy lives. Furthermore, in any policy development, there are a number of non-originating actors who impact the process. These actors mold and influence each other through various developmental phases in order to produce a final product that is appropriate and acceptable. In nutrition, some of these obvious actors would be the previous recommendations, industrial lobbyists, and policy builders. These actors, and their relationships with each other and the policy development process, are explored later.

In addition to pre-policy development actors, there are a number of post-policy actors that influence the produced policy's message transmission to consumers. In relation to nutrition, these factors include media misinterpretation, institutional trusts, and traditionalism. For example, as more Americans have shifted their priorities to becoming more health conscious, the wellness industry, including health information distribution, has exploded in growth, often through non-institutional sources including for-profit companies, advertisements, and personal

blogs (Nagler, 2014). While these actors do not directly influence the policy development process, they still affect citizens' understanding of what makes them healthy.

Actor-Network Theory and Nutrition Policy

The wide assortment of elements within nutrition lend themselves naturally to be studied through a variety of STS frameworks. In STS studies, Actor-Network Theory is often used to analyze the relationship of different components, known as actors, within a system, known as the network (Cressman, 2009). In nutrition policy, the actors are research, policy-making, industry stakeholders, and previous recommendations that shape the research and guideline-development process.

Criticisms of actor-network theory believe the theory is overly broad because of the endless possible connections that can be generated between large numbers of actors. Other critics describe the theory as catch-all and non-substantive because relationships are supposed to be analyzed without the explicit need for a labeled framework (Seabrook). In order to address these criticisms, this paper will focus exclusively on a select few actors: nutritional science complexity, industry-funded studies, historical biases, and scientific consensus. Furthermore, the framework aligns quite neatly with the chosen topic, making it perfect for analysis.

By analyzing the nutrition development factors through the actor network theory framework, this paper will clarify the confusing nature of nutrition policy to the general public. Doing so will also serve as an example analysis on a complex policy, allowing other research to replicate a similar type of relationship analysis on other important policy issues.

Nutrition Policy Results & Discussion

The most impactful factors in the nutrition-policy development process are nutritional science complexity, industry-funded studies, historical biases, and scientific policy consensus. These four actors interact with each other and the process, molding science into guidelines.

Nutritional science complexity means that the ability to draw meaningful conclusions from longitudinal health studies is both difficult and prone to bias. There are a few reasons that make nutritional science especially difficult to study compared to other disciplines. For example, one aspect of the field is the inability to trust participants in long-term health studies. In 1993, the Women's Health Initiative (WHI) assigned several thousand women to a traditional and a low-fat diet, in order to measure the effects of saturated fat on long-term health (Belluz). Despite spending billions of dollars on the study, scientists discovered during their results phase that the two groups had consumed quite similar diets, neglecting scientific instructions. Scientists understand the difficulty in adhering to study rules, but it still poses an issue for nutritional scientists to gather legitimate data and draw meaningful results. That inability for scientists to perform randomized trials introduces a degree of error when they must focus on existing cohorts or groups that already eat a particular way (Belluz). This method of study introduces hidden confounding variables that may indicate a correlation between nutrition intake and health, when there really is not.

Another problem in the field of nutrition studies is the over-reliance on participant recall of their daily food intake. One research paper found serious flaws with studies whose researchers utilized memory-based dietary assessment methods (M-BMs). In this article, Archer claims that M-BMs are extremely prone to false recall, are in no way independently verifiable, and "[have] wasted substantial resources and [constitute] the greatest impediment to scientific progress in

obesity and nutrition research" (Archer) . As the majority of nutrition studies, including the 2015 American Health Guidelines, rely on this form of information transmission, researchers must build error into those responses and thus be more cautious with stating study conclusions. This caution lends to slower changes in nutrition policy, thus cementing historical biases, another actor in this process. The relationship between nutritional science and historical biases can be understood as the latter being artifacts of the former. In order to realize the full extent of this network connection, historical biases in nutrition must be studied from an academic standpoint.

Historical biases represent the previous eras' perceptions, opinions, and legislations on a particular issue. With regards to nutrition policy, historical biases are often a complex problem that requires effective communication and clairvoyance to solve.

The different nutrition policies in the US can be separated by different multi-decade time periods. From the 1950s to the 1970s, nutrition policy was dominated by the fat vs. sugar debate, serving as the earliest instances of those industries creating the earliest historical biases against fat. Even today, individuals associate high consumption of saturated fat and dietary cholesterol with negative health outcomes (Gorski). Another interesting bias arose during this time period: the focus on single nutrient factors as harbingers of wellness or illness. In a paper that describes historical nutrition policy, Mozaffarian argues that this era set a precedent for reductionist approach to healthy eating (Mozaffarian, 2018). Rather than focusing on overall health by having a balanced diet, reductionist advocates seek to critically avoid specific nutrients, such as sugar, fat, carbohydrates. While modern nutritional guidelines no longer follow this reductionist approach, the 1950s-1970s era has left its historical bias mark in the form of popular fad diets such as the paleo diet or the keto diet ("Fad Diets").

The continuous tug-of-war between newer research and traditional thinking is a clear example of two actors interposing each other. Nutritional research is essential to providing cutting-edge knowledge about health, while historical biases are simply fallen traditional guidelines that were imperative to provide society trust and stability. Thus, these actors also play the role as actants, with existing and past policy serving as interessement phases. While conflicts between the past and the present will always exist, one possible mitigation would be to better communicate the rigor of new studies and convey the importance policy-makers take in designing new guidelines. Such moves would reduce the public's overreliance on historical biases, while providing faith and stability in newer policy recommendations. To do this, policy-makers must also reduce the impact of industrial lobbyists.

One of the most influential actors in the policy-making process is the major industrial stakeholders, whose products are directly impacted by national nutrition policy. These major stakeholders often exert influence on policy throughout the development process, by funding research projects to explore health links between their products and/or lobbying legislators to support policies that grow or maintain sales. One reporter, Singerman, from the New York Times, estimates that the sugar industry spent $57 million over the last 20 years on various elections in order to represent the industry's policy interests (Singerman). The presence and influence of these actors significantly affects consensus-builders and promotes historical biases. In fact, large stakeholders, whose profit is directly affected by policy, including those in the dairy and sugar industry, have further added to the confusion by funding studies whose results were later found to be untrue (Soares, 2019).

A particularly striking example is the 1960s sugar industry's direct effect on several published studies. The Sugar Research Foundation (SRF) funded a literature review with

approximately $50,000 to evaluate the link between coronary heart disease and sucrose (“50 Year Ago”). While there were a growing number of studies that were solidifying the link, this literature review concluded that there was minimal association between sugar consumption and heart health, and instead supported studies that implicated fat as the nutritional culprit. John Hickson, the SRF director of research, remarked "Let me assure you this is quite what we had in mind and we look forward to its appearance in print." The review was published in the prestigious New England Journal of Medicine in 1967 before being questioned by scientists nearly 50 years later (Kearns).

In addition to nutrition research, Industry stakeholders can often influence the policy-makers themselves. In 2017, the federal government subsidies of school lunches provided 7.6% of the dairy industry’s total milk sales (“Big Dairy”). From 2010 to 2015, school cafeterias reported a decrease in lunch sales, including milk (“Report: Half”). With the AMA recommending that dairy intake should be optional, the School Nutrition Association (SNA), which gets much of its funding from large food companies including the National Dairy Council (NDC), lobbied hard to reverse Obama-era guidelines (“Report: Half”). It is clear that the political capital of these industrialists allows strong stakeholder input into the decision-making process.

Even with increased transparency standards, the direct influence of industry stakeholders on complex nutrition studies is present. Thus, industry stakeholders connect and influence both nutritional science and historical biases, often serving as a supporting actor in the conflict of both. Since the main method of generating change is from research, studies are the primary intermediary of intention within this network. By funding studies to advance their own products, industrialists promote historical biases, such as reductionist policies. These biases persist and

require stronger nutritional science to change, thus giving industrial stakeholders a maintenance advantage on manufacturing and distributing mass quantities of their product. Throughout the rest of the policy-development process, the effect is still present. Industry stakeholders directly combat consensus-builders over the appropriate recommendations of particular food groups. Thus, consensus-builders must be aware of the relationships between each of these actors, and understand their own effects on the nutrition policy-making process. Overall, compromising and crafting nutrition guidelines involves understanding this actor network and isolating each actor's negative self-interests while retaining actor's the positive relationships necessary to promote development.

Deriving consensus is one of the final steps in the policy-development process and is often the most difficult. A coalition of scientists, experts, regulators, and consensus builders work on executing policy at the local, state, and federal levels (Fogli-Cawley et al., 2006). Consensus builders are responsible for interpreting nutritional studies, mitigating historical biases or reinforcing correct perceptions, and reducing inaccurate industry stakeholder input. In recent years, the rise of uncertainty and confusion stems from a guideline shift away from naive reductionist policies. Furthermore, an increase in the quantity of federally-funded nutrition studies has led to more scientific conflicts (Kuchler, 2015).

One of the most important aspects of nutrition policy development is effectively communicating results in a transparent, truthful, understandable manner. The advent of the Internet spurred an exponential amount of knowledge transfer between individuals, allowing misinformation to travel remarkably quickly. For example, media misinterpretation has skyrocketed because as more Americans have shifted their priorities to becoming more health conscious, the wellness industry, including health information distribution, has exploded in

growth, often through non-institutional sources including for-profit companies, advertisements, and personal blogs (Nagler, 2014). For example, anti-vaccine proponents often prey upon parental fear and concern about child development, despite no studies showing this to be true (Carpenter). Thus, the US government has a responsibility to issue clear, meaningful advice in order to best take care of its citizens.

Within the nutrition policy network, policy-makers are directly affected by historical biases and industry stakeholders, but also hold enormous power in affecting them as well; for example, current policy-makers craft recommendations that are tomorrow's historical biases and directly change the way industry stakeholders produce, market, and sell their products to consumers. In nutrition, policy-makers work through several different methods to effectively carry out their mission such as mandates, restrictions, and incentives ("Public Health"). Mandates typically are laws that require citizens and industry stakeholders to submit to promote general health; one modern example is requiring vaccinations for students who attend public school. In contrast, restrictions are usually executed to reduce behavior or action that is considered a threat to public safety and security, such as banning the sale of cigarettes to minors. Meanwhile, economic incentives are a third way to positively or negatively punish firms whose products strongly affect Americans; with regards to nutrition, this is a growing, attractive option, especially for substances that are especially harmful, such as alcohol and cigarettes (Mozaffarian, Angell).

This part of policy-development shows that consensus-builders can use legal power to encourage certain behavior across the country. As a result, consensus-builders often act upon nutrition science, industry stakeholders, historical biases from a powerful position. However, those three actors often fuel the decisions that allow consensus-builders to progress, thus once

again illustrating that all actors serve as actants. And while the intermediaries of the intentions of these actors should mainly be science, it is clear that money also plays a role, through funding, lobbying, and distribution. Altogether, nutrition policy is a field with a dynamic network of actors, each of which constantly feeds back into the system to create a complex, layered product.

Limitations & Future Research

The analysis of the paper focused on exploring four actors working through policy-making. While these four actors were extensively researched and analyzed, there are ultimately far too many other actors who play smaller roles in the network. These actors were mainly ignored and black-boxed because their visible effect was not as pronounced. Furthermore, there are a number of post-development nutrition actors that receive the finished product, nutritional guidelines, and use it to advance their own interests. While it would be interesting to incorporate those into analysis, adding extra actors would involve far too much research into possible relationships with the current researched actors (Seabrook). Furthermore, there would be a near infinite number of relationships that could be described, and it would be difficult to analyze which particular ones play the biggest role in informing the common citizen. However, a future paper could theoretically apply the same ANT framework to post-development actors. This would shed more light on the incorporation and acceptance of information by citizens, thereby providing insight on how to best communicate and educate consumers about important health news.

Conclusion

Nutrition policy is clearly a complicated process from research to publication. Complex research science, historical biases, industry stakeholders, and policy-builders are working to advance their own self-interests by influencing each other as well as the process itself. The actors, and their relationships, motives, and goals, were analyzed through the Actor-Network Theory, thus illustrating some of the strongest relationships of the actors' influences in the nutrition policy network. By shedding light on these factors, this paper delivers better clarity to the general public about the opaque nature of nutrition policy. Ultimately, by analyzing nutrition policy, this paper illustrates the development of institutional guidelines and provides a blueprint such that similar analyses can be performed on other equally important topics.

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