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# Extended Abstract: Storytelling with Data and Narratives for Health Communication

Hai L. Tran
*DePaul University, USA*
htran10@depaul.edu

***Abstract - This research examines the mechanism underlying differential and combined impacts of statistical evidence and anecdotal evidence in health communication. The purpose of the current undertaking is two-fold. First, it integrates disparate lines of research into a unifying model that better explains how and why people are influenced by narratives and numbers as well as factors driving such effects. Second, the study informs health communicators about ways to appropriately employ storytelling and data techniques in crafting messages that promote health choices.***

***Index Terms – Anecdotes, data, health communication, narratives, statistics.***

## INTRODUCTION

While statistics and narratives are often employed as communication strategies to inform and influence individual decisions regarding health-related issues [1], this process is mostly operated through trial and error. There is a demonstrated need for health communicators to better understand the effects of storytelling and data-based reporting on how people process health information, form perceptions, and change behaviors. In the academic world, scholars tend to study statistical evidence versus anecdotal evidence as though the use of one form precludes the other. There is value in reconceptualizing the effectiveness of data and narratives in individual and collective terms as well as the mechanism underlying such effects.

## THEORETICAL CONNECTIONS

Although the impacts of statistical evidence and anecdotal evidence have been actively studied, researchers often discuss the competing nature while rarely attending to the issue of compatibility and integration of the two forms of evidence.

### *I. Narrative superiority*

Studies in media effects and cognitive psychology demonstrate a stronger effect of case descriptions as opposed to statistics. Narrative elements, including quotes, soundbites, photos and moving images, testimonials by individuals, are thought to transport the audience, thereby forming connections with the character or the situation. The advantages of narratives are explained by theories such as vividness effects [2], exemplification [3], transportation-imagery model [4], base rate fallacy [5], and availability and representativeness heuristics [6]. The typical message recipient relies on anecdotal evidence to process information and form perceptions because concrete examples of real-life dimensions are more vivid, attention-grabbing, imagery-evoking, easy to understand, and readily available.

### *II. Superiority of numbers*

Meanwhile, persuasion research lends support for the dominant impact of facts and figures. Quantified accounts such as statistics, infographics and data visualizations are valued for their valid representation of reality. People perceive data as more objective and more verifiable than anecdotal evidence conveyed through narrative devices. According to the logics of sample size [7], consensus [8], and social validation heuristics [9], the average recipient of health messages tends to accept inferences drawn from quantification because they are based on a large number of cases.

## SPECIFIC EFFECTS

Although existing research yields conflicting results, the advantages and disadvantages of communicating health messages through statistics and narratives can be better explained by Seymour Epstein's cognitive-experiential theory [10], which states that humans employ two distinct systems to process information. The rational system requires processing of logical evidence, effortful analytical cognitions, which are affect-free. Meanwhile, the experiential system is intuitive, rapid, automatic, and holistic, thereby demanding minimum cognitive resources and relating to the experience of affect. In certain situations, one system might dominate the other, but rational and experiential modes of processing operate in parallel and at the same time. Therefore, a combination of

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statistics and narratives is more effective than either form of evidence.

The table below provides an analysis of the differential impacts of statistical evidence and anecdotal evidence on audience response.

TABLE 1. EFFECTS OF DATA AND NARRATIVES.

| **Statistical evidence** | **Anecdotal evidence** |
|---|---|
| Induces cognitive responses | Induces affective responses |
| Targets the cognitive component of attitudes | Targets the behavioral component of attitudes |
| Conveys informational value | Conveys realism |
| Supports general claims | Supports specific claims |
| Is less effective in reducing counter argument | Can alter information processing and reduce counter arguments |
| Shows relational patterns, invites inferences | Communicates causal patterns, expresses normative claims |
| Supports the acceptability of a conclusion | Supports the desirability of a conclusion |
| Produces less immediate, more enduring effects | Produces faster, more ephemeral effects |

## OVERARCHING MECHANISM

There are several explanatory drivers of the effects of data and narratives on audience response. Message features and human factors can come into play, thereby creating conditions that enhance or undermine the influence of anecdotal evidence and statistical evidence. This research proposes an integrative model to explain how message characteristics (modality, vividness, salience, congruency, position) and individual differences (involvement, numeracy skills, cognitive resources, cultural orientation) impact selective exposure, which in turn activates pertinent modes of processing, thereby eliciting corresponding responses.

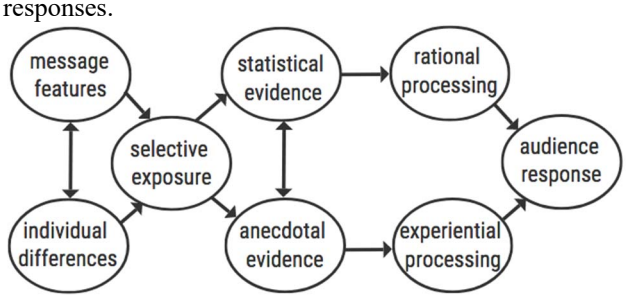


FIGURE 1. PROCESS GOVERNING EFFECTS OF DATA AND NARRATIVES ON AUDIENCE RESPONSE.

## IMPLICATIONS FOR HEALTH COMMUNICATION

The present study links theory to practice by providing a more complete picture of how and why people are influenced by health information conveyed through quantitative and qualitative accounts. It helps develop a typology of possible scenarios and appropriate strategies for health communicators. They could use these suggestions as guidelines to inform decisions regarding the incorporation of data and narratives in health-related messages in order to enhance health choices.

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## ABOUT THE AUTHOR

**Hai L. Tran** is an Associate Professor at DePaul University (USA), where he teaches multimedia storytelling and data reporting. His research focuses on communication technology, including multimedia effects, online agenda setting, methodology.