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A review of truth-default theory: Implications for information behavior research

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Abstract

Determining truth and accuracy of information is a key challenge in today's fast-paced, global information economy dominated by social media. The field of Information Science, while publishing extensively on information seeking and use, has not done sufficient research into how individuals detect falsehood or deception in information they encounter. This paper describes Levine's Truth-Default Theory (TDT) and links information behavior (IB) research to three vital aspects of the theory. Furthermore, this work demonstrates how TDT can be merged with T.D. Wilson's General Theory of Information Behavior, applying decades of research on deception detection to foundational IB theory. Implications of marrying these two ideas are discussed as well as suggestions for future research.

KEYWORDS
deception detection, information behavior, information theory

1 | INTRODUCTION

Information behavior involves studying humans interacting with various forms of information, including processing, using, and sharing information. A key part of IB is evaluation - determining quality, reliability and validity of information. While decades of research have been conducted on how people search for, manage, and use information, not much has been done to examine how individuals detect and act upon false information. This paper reviews Levine's Truth-Default Theory, helping researchers understand how it can be applied to the IB field, particularly using Wilsons' general theory of IB. TDT, developed over 20 years through Levine's work in social psychology, focuses on how individuals determine if others are truthful as well as which factors are most effective in identifying truthfulness. When humans communicate with others, they tend to "operate on a default presumption that what the other person says is basically honest" (Levine, 2014, p. 378). Finding reliable information

is a key goal of IB. TDT can be instrumental in illuminating how people decide which information is truthful, whether judgements are accurate, and ways to improve this process. This utilization of TDT for IB can be applied to a wide range of scenarios, but it is most pressing in the realm of social media. By overlaying existing IB studies onto Levine's theory and aligning them with its key principles (Levine, 2014), this paper demonstrates TDT can be used as a core theory in IB.

2 | WILSON'S GENERAL THEORY OF HUMAN INFORMATION BEHAVIOR

According to Wilson (2016), IB models developed throughout his career serve as a foundation for *A General Theory of Human Information Behavior* (Figure 1). Researchers refer to it as theory because it exhibits all the characteristics of a theory. Wilson (2016) references Dubin's characterization of
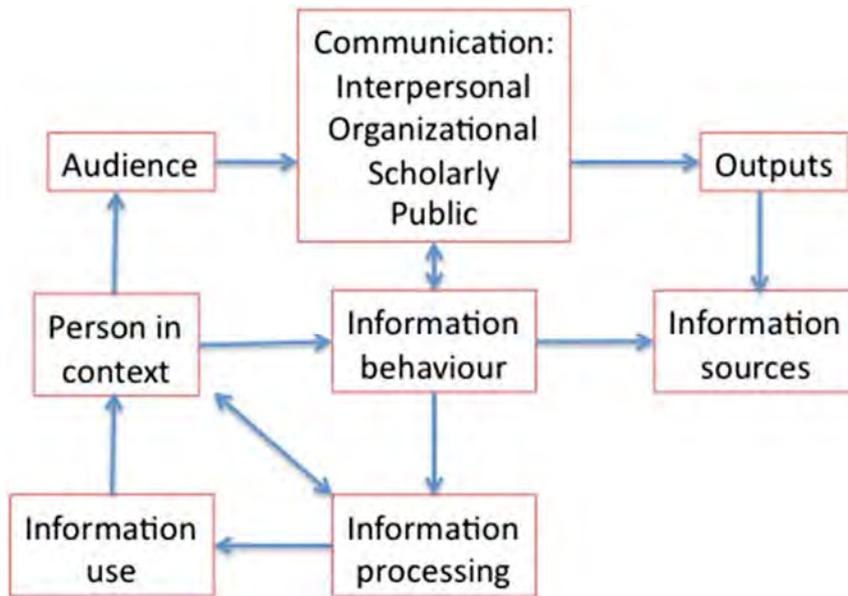
**FIGURE 1** Wilson's general theory of human information behavior
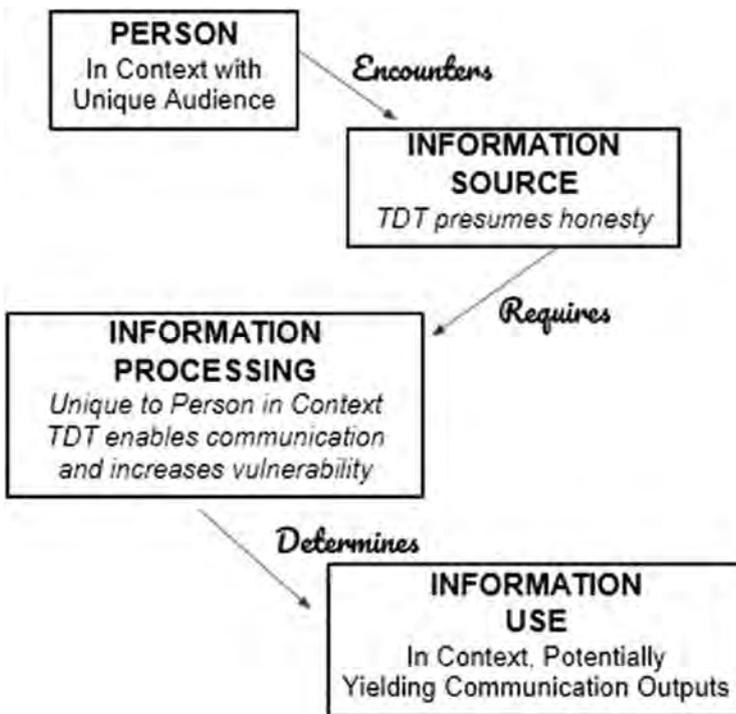
FIGURE 2 Truth default for information behavior

theories (1978), stating that in order for a theory to be regarded as such it must: have ties to the area of interest, demonstrate how those ties are related, state why the ties are pertinent to the purpose, and highlight any limitations or exceptions that should be considered.

Wilson's (2016) general theory of human IB successfully meets criteria laid out by Dubin, illuminating ties between an individual's interaction with information based on their information needs and motivation behind information-seeking behaviors. He also describes information sharing/withholding/exchanging, collective and collaborative information, motivations driving the need for information and successes/failures in obtaining information.

Besides Dubin's characteristics, Wilson outlined additional criteria that should be met by general theories, saying they should be generalizable and applicable to a variety of circumstances, be driven by a cause, be explained/predicted by the cause, withstand the test of time, generate hypotheses, and fit into its realm or field of study (2016). Wilson's general theory of human IB meets all criteria mentioned.

3 | OVERVIEW OF TRUTH-DEFAULT THEORY

Levine (2014) introduced TDT as an overarching explanation for his body of research on lying and detecting lying in others

which reveals an overarching logic focusing on credibility assessment and deception detection accuracy. Levine asserts that, "when humans communicate with other humans, we tend to operate on default presumption that what the other person says is basically honest," (Levine, p. 378).

Previous theories of deception detection focused on cognitive effort, emotion, strategic self-presentation, and nonverbal behaviors, but Levine refutes these explanations by asserting that humans simply tend to believe each other. Rather than considering this a failing of human judgement, Levine believes default to truth is highly adaptive to humans. Levine states:

> The truth-default enables efficient communication and cooperation, and the presumption of honesty typically leads to correct belief states because most communication is honest most of the time. However, the presumption of honesty makes humans vulnerable to occasional deceit (pp. 378–379).

A significant amount of evidence must accumulate for someone to begin doubting truthfulness of another individual. This "trigger" is the point where accumulation of facts is taken seriously and the person begins to doubt their own initial assumptions. The trigger is only activated once someone can no longer ignore their doubts, finally acknowledging the lie. Levine (2014, p. 379) further explains:

> There are times and situations when people abandon the presumption of honesty, and the theory describes when people are expected to suspect a lie, when people conclude that a lie was told, and the conditions under which people make truth and lie judgements correctly and incorrectly.

Based on characteristics of theories discussed by Wilson (2016), TDT can be viewed as a general theory of IB. First, it is generalizable. Previous studies have employed TDT to study IB of university students (Levine et al., 1999; Levine et al., 2006; Levine et al., 2011; Levine et al., 2014a, 2014b; Park et al., 2002), and it can be applied in any context requiring credibility assessment and deception detection. Second, TDT has causality. For example, people tend to be truth-biased; therefore, if an individual does not trust an information source, they will seek other sources to verify the information. Third, TDT tries to provide explanations for why people are truth-biased. All human cultures, religions, and most legal systems prohibit deceit. Most people are taught not to lie from a very young age (Levine, 2014). Fourth, the theory exhibits timeliness and extendibility, not being limited to certain contexts. Research on TDT will likely grow

as popularity of social media increases and people must determine the accuracy of what they read on these sites. Fifth, TDT allows for hypothesis generation. Levine et al. (2016) generated six hypotheses to test the Park-Levine Probability Model of deception detection accuracy in an empirical study, revealing that accuracy is a function of message veracity base-rate. Lastly, TDT can be expanded by merging it with other IB models and theories. It deals with deception detection, an underlying need in all situations where information is being exchanged, and therefore can be applied in any situation where IB is being studied.

As mentioned previously, TDT emerged from a series of studies revealing cohesive logic surrounding credibility assessment and deception detection (Levine, 2014). There are 13 sub-areas of research Levine folds into TDT; three of the most pertinent to IB are discussed below.

3.1 | The veracity effect

The truthfulness of a message predicts whether the communication will be judged accurately. Individuals tend to trust information shared with them, and this trust is strengthened as the majority of information proves to be trustworthy. This same bias toward truth by individuals has been discussed in the field of IB in relation to information seeking. The IB concept of satisficing relates to individuals' tendency to trust information that meets their basic needs due to being overwhelmed by an abundance of information sources and difficulty in identifying reliable sources (Case & Given, 2016). Connaway et al. (2011) find information seekers satisfice for information that fulfills minimum requirements, preferring convenience and ease to due diligence. Budd (2010) describes a student seeking information from a school librarian for an assignment who is likely to trust information provided as long as it serves to complete the assignment. Multi-disciplinary links to the veracity effect relate economic theory of supply and demand to social science, where demand for a commodity (information) is relative to the price or effort expended. The low effort of trust is preferred to the high cost of continued information seeking and verifying sources which requires time, energy and expertise (Homans, 1967).

3.2 | How people really detect lies

Levine found in everyday life lies are detected most often through discovery of evidence proving falsehood or confession by the liar. Also, lies are most often identified after the fact. People are not good at recognizing deceptive information in the moment when they encounter it. Sheremeta and Shields (2017) determined that information providers,

whether deceptive or non-deceptive, are accepted by receivers as honest. The sender's credibility is more likely to invite trust than the ability of a receiver to judge lies (Bond & DePaulo, 2008; Law et al. 2018).

3.3 | Sender honest demeanor

While some people generally seem honest, others are frequently doubted. Many factors contribute to a person's believability, yet the combination of these factors, their demeanor, has little to do with the person's honesty. Similarly, individuals tend to use subjective, less reliable methods to judge truthfulness of information rather than proven information literacy skills based on reliable evidence. IB research has shown believability of information is often based on common beliefs, values or knowledge with the receiver. Case and Given (2016) call this selective exposure, acquiring information aligned with already-held beliefs.

Gladwell (2019) emphasizes that we are social creatures relying on truthfulness of others to navigate our everyday lives. He describes Levine's research in which participants watched videos of students cheating on a test and were asked to determine if those students were telling the truth about cheating. Participants were only able to identify liars 56% of the time, barely more accurate than random chance. This led him to theorize that people tend to assume others are honest, thus overestimating the number of truthful responses and struggling to identify dishonesty. Levine believes this default belief provides an evolutionary advantage for survival as humans are often required to depend on others for important information.

4 | MERGING TRUTH DEFAULT THEORY AND GENERAL THEORY OF INFORMATION BEHAVIOR

Wilson (2016) made the case that his body of work be considered a general theory of IB. This framework provides a comprehensive look at IB and can be used to generate hypotheses. However, Wilson does not go into specific detail regarding what takes place within the information processing portion, leaving it "a 'black box' with contents unspecified" (2016).

In order to draw lines of meaning between TDT and Wilson's theory, we have developed a new integrated model illustrating their convergence (Figure 2). Human tendency toward truth-default influences how a person, in context, views a source, processes information, and determines how to use information.

While this preliminary model does not reflect all the same connections between elements as Wilson's model, it uses those elements to demonstrate how TDT concepts are embedded within IB. It focuses on the person in context processing information, affecting future information processing and behavior as well as their particular audience. The individual encounters an information source, based on previous IB and outputs, and presumes it to be truthful. This information source requires processing and evaluation in the specific context. Most instances of processing are cursory and superficial which, according to TDT, enables efficient communication but also makes the person more vulnerable to deceit. The result of information processing determines information use, either internal (trust v. do not trust) or external (investigate, support, refute).

While the intersection of TDT and IB can be seen in various contexts, social media is a particularly salient example. Levine identifies deception in the realm of information as "intentionally, knowingly, and/or purposely misleading another person," (p. 379) including less overt forms of deception such as "omission, evasion, equivocation, and generating false conclusions with objectively true information" (pp. 380–381). These types of deception are being seen on social media when individuals or organizations post misleading information.

Based on TDT, social media users will tend to believe information they read. "Absent deceptive intent, awareness, or purpose, a message is considered honest," (Levine, p. 379). "The truth-default involves a passive presumption of honesty due either to (a) a failure to actively consider the possibility of deceit at all or (b) as a fallback cognitive state after a failure to obtain sufficient affirmative evidence for deception....The possibility that a message might be deception often does not come to mind unless suspicion is actively triggered," (Levine, p. 381). If social media users find information compelling or meaningful, they may share it within their social networks.

Wilson acknowledges as a newer form of communication, social media post-dates his earlier models, yet the basics of IB still apply. Information sources generate messages for an audience, and the user in context must process and determine how to use that information. "Social media may be employed to discover information or exchange information or even publish information" (Wilson, 2016).

5 | DISCUSSION AND CONCLUSION

TDT does not rely on the sender's demeanor or nonverbal cues to reveal deception, instead focusing on contextualized communication content. "Most lies are detected either through comparing what is said to what is or what can be known, or thorough solicitation of a confession" (Levine, p. 382). This makes it clear face-to-face contact is not necessary to detect deception, opening the door for exposing

falsehoods in digital contexts such as social media. Furthermore, Levine points out that "most lies are told by a few prolific liars," (p. 383); therefore, we may be able to educate social media users in how to detect these major offenders, increasing deception detection of social media users and improving reliability of information being shared. Reviewing IB through the lens of TDT reveals ties between accepted IB theory and Levine's body of work in detecting truthfulness in one-on-one communication. The majority of Levine's key findings can be directly correlated to previously published IB research, and this significance has implications for future research as well as practice.

If apples do not look or taste at all like bananas, why do we say they are similar? Because they are both classified as fruits. Remove this classification, and they do not seem similar at all (Tversky & Hutchinson, 1986). Similarly, most information articles on social media appear relatively the same (size, format, layout, etc.), but this does not mean they are similar. In fact, they are vastly different. However, because social media users are classifying this information together based on visual similarities, they are all considered "news". IB researchers need to highlight this misleading classification, helping users differentiate pieces of information on individual merit. This has been accomplished with books, as everyone knows an encyclopedia and romance novel are not equal informationally. This has been accomplished with mail; letters, bills, and junk mail all look similar but are treated very differently. The same goes for television (infomercials v. documentaries), radio (War of the Worlds broadcast v. emergency alerts), and email (spam v. genuine messages).

Implications for real-world application of TDT to IB can be seen in areas as expansive and crucial to everyday life as politics, public health, and spread of information via social media. Extending this work to determine how Wilson's theory and IB in general work with the Park-Levine Probability Model, diagnostic utility, and expert questioning is vital to furthering this research. For example, based on the Park-Levine Probability Model, most messages people receive and send are honest because people are truth-biased in their everyday life, in face-to-face interactions, and when they know the person they are talking to. However, when they know the sender tends to be deceitful, people are more likely to distinguish truth from lies (Levine et al., 2006). In future studies, the Park-Levine mathematical equations could be converted to a graphic representation of key concepts more useful for IS research.

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