Informing systems and misinforming: A conception for research about information fabricating in organizations

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Abstract

Informing systems are critically designed to organizational information requirements and needs which consist of information as represented and used. The use of information is largely a tacit and situational affair. That is, the use of information depends upon the ends-in-view and the tasks-to-achieve them, as well as their circumstances and contexts. However, contexts and circumstances of information use are not the circumstances or contexts of the informing system. Circumstances and contexts are also the organizationally shared systems of meanings which make up the metaframe of the organization. This paper commences with a literature review to explore the problematic of informing systems within an organization and its dilemma of subsequent and occasional misinformation that is communicated within the infoscape. We then proffer a conceptualized model for empirical research (qualitative and quantitative) into how (and if) informing systems might be the ways and means of not only informing, but also misinforming and biasing of information to users within the metaframe of organizations.

Keywords: Informing System, Informing Object, Infoscape, Metaframe, Misinformation, Post-Truth.

Introduction

Informing systems are critically designed to organizational information requirements and needs which consist of information as represented and used (which consist of ends-in-view or objectives and tasks-to-meet-the-objectives). The use of information is largely a tacit and situational affair. That is, the use of information depends upon the ends-in-view and the tasks-to-achieve them, as well as, their circumstances and contexts. Contexts and circumstances of information use are not the circumstances or contexts of the informing system. Circumstances and contexts are also the organizationally shared systems of meanings which make up the metaframe of the organization. They are silent and nonconscious, embedded in the affairs and states of affairs of the organization. They are simulations, hypotheses, and interpretations of an organization's world (Norretranders, 1991).

Circumstances and contexts of the use of information are the situations wherein the decision models and action models are in place and where information is used. An informing system assumes these models exist within the organization's system model (the organization's self-reflective view of how things work together) which are the affordances and constraints of the informing system itself.

It is the case that decision models and action models assume the presence of the truth or correctness of the information in use. This theory paper commences with a literature review to assist in developing a conceptualized model that outlines the component elements of organizational informing systems within a metaframe, such as the infoscape and informing objects. We further incorporate selected circumstances and

situations involving the utilization and processing of information and misinformation, resulting in the ultimate human goal to solve problems and make decisions.

The Problematic

The problematic is to ideate and develop a model for empirical research (qualitative and quantitative) into how (and if) informing systems might be the ways and means of misinforming of and biasing of information users in organizations (Eco, 1976; Liu, 2000). It is a model for the study of the Said and the unSaid (Geertz, 1973) of information use in organizations. While the problem appears to be of contemporary origin—as is evidenced by the cited foundational literature, the problem is one that has persisted over the millennia.

Such a model for doing research is grounded in the social construction of information usage (Brown & Duguid, 2000); it is an extension of the idea that an infoscape is organized within various primary frames (Goffman, 1974) of information use: the political, financial, legal, ethical, moral, historical, artistic, psychological, and the technological (Skovira, 2004; Skovira, 2005). A tentative conception of the model begins with an understanding of information as proposition by which an informing message can be viewed as either true of false (Fox, 1983; Skovira, 2002). Information that is false is misinformation (Ackoff, 1967). The model tentatively reformulates and details the frame concept by adding secondary frames (Hofstede & Hofstede, 2005), and by using Hall's (1981) ideas about high and low contexts of communication. Bateson (1972, p. 21) described this phenomenon as a circular and formal structure for a problematic discussion, a "metalogue." A metalogue is a conversational feedback loop that links content with context but can "muddle" both the context and context since "all experience is subjective." This extension of the framing idea rests on the inclusion of two different kinds of "turns" on a frame: the keying turn and the fabricating turn (Goffman, 1974). The model assumes that information use as determined by its frame or context can be "turned" toward a true or informative use or a deceptive and misinformative use by a transformation of the frame. The model will be a delineation of possible categories and domains of observation and analysis to be used in doing ethnographic, and other qualitative and quantitative research into the uses of information within organizational settings.

Universities, in particular, in their research initiatives to develop theories and their applications have been focused on the generation of information to add to both new and existing knowledge bases; with little or no attention to the potential bias and future consequences of misinformation and disinformation. The capture and generation of information for business decision making, political reporting, and military strategy effectively ignores the impact of misinformation and disinformation bias with the possible exception for the discussion of computer crime (Cohen,1999, 2000a, 2000b, 2007a, 2007b, 2009; Hoffman & Wallach, 2007). Stahl (2006) further discusses the differential between misinformation which he attributes to accidental falsehood, and disinformation, which he argues is deliberate falsehood. He further argues that bias is "unacknowledged personal conviction" and may be the basis for misinformation.

Therefore, it is important to note the distinction between misinformation and disinformation. Misinformation refers to false or out-of-context information that is presented as fact regardless of an intent to deceive. Disinformation is a type of misinformation that is intentionally false and intended to deceive or mislead, such as propaganda, yellow journalism, or fake news (Karlova & Fisher, 2013). Both misinformation and disinformation involve the sharing of bad or debunked information, with varying intents and purposes (Molina, Sundar, Le, & Lee, 2019). Regardless, whether it is disinformation or misinformation, it's important to investigate the source to learn if it is inaccurate, and upon confirming negative research the receiver should neither believe nor rely upon it to one's detriment. However, for the purposes of this exploratory cognitive theory, our position paper is limited to the constructs of information and misinformation, only.

Organization as Metaframe for Information Use

The Infoscape

An organization is an infoscape (Skovira, 2004). An infoscape (information landscape) consists of all formal and informal informing systems in use in an organization. An organization does not, cannot, exist without informing systems. Informing systems are the real world for any organization. The organization is a metaframe of informing systems within one, multiple, and/or networked matrixed infoscapes. Information in the infoscape is operationalized through informing objects (i.e., human, machine, and otherwise).

Goffman's (1959) portrayal of situational awareness and the presentation of self fits the organizational metaframe scenario for information use. We communicate through socialization in the workplace and use our contextualized staged performance in any face (form) from which we want to be perceived by a specific audience. Our social and symbolic interactionism (Blumer, 1969) within the organizational infoscape dramatizes and manages the impressions we portray ourselves to others, albeit through truth (information) or falsehoods (misinformation). Nevertheless, our human dilemma has always been to discern factual information from misinformation in order to solve problems and make decisions.

Information and Misinformation

Information, as a conception of something (x) in terms of relationships and consequences, assumes a truthful representation of the something (in terms of its attributes) together with attaining relationships and consequences. Information use matches ends-in-view and attendant tasks to the something with its relationships and consequences. The match takes place and only if there is truthfulness (a relation between ends-in-view and the information).

Shannon's (1948) contribution to our understanding of this process was his development of the *Transmission Model of Communication* (Figure 1) that revolutionized data to information transmissions by radically introducing the construct of digitizing information. Shannon opened the door to the onset of the Information Age and Big Data development through his theory of a digital communication infrastructure and network that was cleaner, faster, more efficient, and generally an error-free mode than the analog process of an ordinary arithmetic computer or calculator. Data and resultant information must have meaning, hopefully the same meaning to both the sender and the receiver. All have applicable subjective meanings making it a very tricky undertaking to ensure that the message sent makes it through a certain amount of noise, interference, or distortion from outside sources; and equally challenging to ensure that when it is received it is decoded and comprehended as originally intended. However, Shannon and Weaver (1949) both acknowledged that without the proper feedback loop, information sent and received could be misinterpreted and misunderstood; hence the intended original information may result in misinformation.
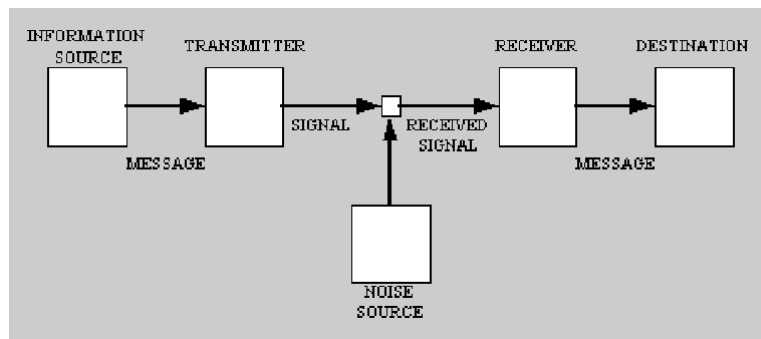
Figure 1. Shannon's Transmission Model of Communication
(Communication Model Source: Shannon, 1948, p. 2)

From an economic perspective, Simon's theory of "satisficing" (1947; 1956), a portmanteau of "satisfy" + "suffice," taught us to optimize our problem-solving and decision-making with the best available information that we could gather and comprehend within the constraints of our own human bounded rationality. However, Simon did not address facts vs. fiction in his ground-breaking theory.

There is misinforming if there is a disconnect between information use and the end-in-view guiding the use of the information. Information is misrepresented and misinforming when its use (its end-in-view and its tasks) are inappropriate, deceptive, or the ends-in-view is changed to something rather than what is in place in the informing system. Crowley and Janus (2004) coined this phenomenon as the misinformation effect.

Misinforming happens when ends-in-view are tacit (as they usually are) and people interpret differently the information (it is used to achieve silent ends-in-view). Simulations, interpretations, and hypotheses (Norretranders, 1991) all work according to ends-in-view. Fox (1983) argued that a proposition is an assertion; and that "Informing does not require truth" (p. 157). He further contended that: "Misinforming requires falsity" (p. 159). Information can also be "partial…contrived information" (Hofstetter, et al, 1999, p. 354). Calvert (2001) described this effect as the result of misconduct or simple bias by taking information out of context.

Fabrication is "the intentional effort of one or more individuals to manage activity so that a party of one or more others will be induced to have a false belief about what it is that is going on (Goffman 1974, p. 83)." For example, a meeting where the situation is a discussion of a breakeven point when the breakeven point information and details are used to politically control the situation may incorporate misinformation (Neumann, 2003). This is especially the case when the manner of calculating the breakeven point and the inputs are not made available, but the outputs are used to determine the unproductive work of people (Sims, 1993).

The term, "fake news," was incorporated and defined into the Oxford English Dictionary (2019) as "news that conveys or incorporates false, fabricated, or deliberately misleading information, or that is characterized as or accused of doing so." Fake news is generally considered disinformation, rather than misinformation (Davey & Tatnall, 1999).

RAND Corporation (Kavanaugh & Rich, 2018) elevated the topic with its report entitled, "Truth Decay," exploring the diminishing role of facts in American organizational life. The authors identified Truth Decay's four trends as: 1). Increasing disagreement about facts and ideas; 2). Blurring of the line between opinion and fact; 3). Increasing volume and resulting influence of opinion over fact; and 4). Declining trust in formerly respected sources of factual information. RAND's study reported an erosion of civil discourse, political paralysis, alienation and disengagement, and overall uncertainty. Not unexpected, the drivers of

Truth Decay were identified as changes in the information system (including the rise of social media and the 24-hour news cycle), elevated cognitive bias, and competing demands for attention from multiple sources (Figure 2).
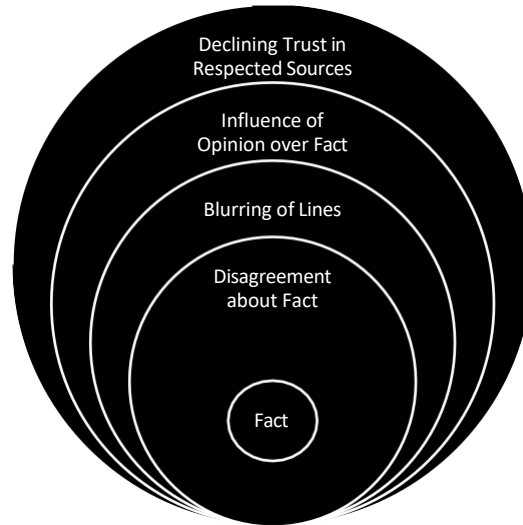

Figure 2. Truth Decay: Information System from Truth to Misinformation

Information sharing in organizations, especially the impact of sharing freely versus not sharing, was studied using game theory and agent-based simulation (Jolly & Wakeland, 2008). Not surprising, sharing was found to greatly increase the overall amount of information within the organization. Unexpectedly, agents who share acquire more information than hoarders. This is due to the synergy that develops between groups of agents who are sharing with each other. The implications are that organizations should actively encourage information sharing; and agent-based simulation was shown to be a useful tool for studying organizational phenomena.

Nevertheless, the power of negative discourse in information sharing may result in reshaping post-truths, such as organizational social media participation (Kozinets, 2018). Post-truth is defined as relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appears to emotion and personal belief (Oxford English Dictionary, 2017). Post-fact truths are boosted by misinformation through social media; therefore, are easy to distribute but difficult to refute. The source of the information, misinformation, or disinformation is relevant to the sender's intent and how the data is conveyed to the receiver (Echterhoff & Hirst, 2005; Weiner, 1992). With so many competing sources of information, truth, trust, and reliability in the veracity of statements depends increasingly on the persuasive rhetoric of the specific messenger (Zappavigna, 2012).

Informing Systems as Frames of Information Use

The informing system is all that there is. There is nothing that is not an informing system or is a part of an informing system. An informing system as a conception is an abstraction of the mechanisms and objects and relationships which physically and logically make up the experience of information flow. What kind and amount of information an informing system needs is determined by the system and its goals. Goals are informational requirements. Goals are statements of wide-ranging consequences. Objectives are statements of tasks and the observable consequences of the completion of the tasks.

An informing system determines the form of its information. In the design of an informing system, the essential nature of information (if there is one) is assumed. What information is, what form it shows up in, is functionally dependent upon where and how the data or givens-to-be-interpreted are used. The analysis of the informational needs of the people and organizations determines the primitive forms of data (information) to be collected and embodied in databases as events-for-the system.

An informing system creates a low context of communication (Hall, 1981). What this means is that everything is spelled out, in detail. A low context informing system is a provider of detailed information flows. Within an organizational infoscape, an email from a supervisor is sent to all workers; however, each worker reads it as if it were addressed only to himself or herself.

When the informing system deliberately creates a high context of communication (Eco, 1976; Goffman, 1974; Hall, 1981; Hofstede & Hofstede, 2005), bias, misinformation, and disinformation are the results. A high context of communication allows for ambiguity of information use situationally, creating uncertainly in language and social affairs. A high context of communication encapsulates information flows.

When we construct informing systems, we make up a general-purpose informing system which when in use or when used is always physically and logically a different specific informing system for the individual using it. The key is "the set of conventions by which a given activity, one already meaningful in terms of some primary framework, is transformed into something patterned on this activity but seen by the participants to be something quite else" (Goffman 1974, pp. 43-44). Keying is always dependent upon a primary frame or perspective but is a "turn" on it (Goffman 1974, p. 46).

An organizational informing system is the means of continuity between the events for-the-system as stored in its databases and any response to these events-as-known across sociocultural and temporal boundaries of the system (Lawrence, 2003). Informed action is a consequence of the continuity provided by the system's structures and indicated by a system's goals and objectives.

An informing system is the construction of meaning in an organization (Geertz, 1973; Norman 1988; Percy, 1975). An informing system is a method of recreating, reorganizing or resetting of relationships and meanings within a system and distributing what counts as information within an organization. An informing system is a means of constructing or making explicit the meaning and the relationships modeled in the system's databases and knowledgebases. Meanings change as actions change events-for-the-system.

The meaning of the events modeled in a system's database, the information of the events-for-the-system, is shaped by the informing system. Events, objects, facts are always events, objects or facts for a system; as such they are meaningful only to a system. A system acquires them because they will help flesh out the system's perspective of reality. A corporation's database is the event world of the corporation (Murphy, 2011). The event world is all that there is. The event world consists of names of objects, and names of the values. The event world is modeled in the Givens. Data are events meaningful to the organization or persons and represent events-for-the system.

For the individual user, an informing system frames a situation by directing information flows to the right objects or tasks, and constraining ambiguity and uncertainty. "When the individual in our Western society recognizes a particular event, he tends, whatever else he does, to imply in this response (and in effect employ) one or more frameworks or schemata of interpretation of a kind that can be called primary" (Goffman, 1974, p. 21). A personal informing system provides affordances clearly symbolizing answers. "In sum, then, we tend to perceive events in terms of primary frameworks, and the type of framework we

employ provides a way of describing the event to which it is applied . . . A framework provides the means of interpretation" (Goffman, 1974, pp. 26-28).

An informing system really is a conception of a certain state-of-affairs codified or implemented in procedures, hardware and software, and people's activities not only of how to act, given certain facts and knowledge, but what to act on. Data are always sensible and interpretation generates clearly the information or concepts described in a database. An informing system's data are determined by the information requirements of the organization and are taken from the environing world; data are the state-of-affairs which count, which are meaningful for the system and are so represented by the system. A database is a text to be re-interpreted by and for the user. A database is a model of an environing world.

Therefore, an informing system is a metaframe of interpretation. An informing system is a method of structuring and controlling not only the flow of information but its manipulation (interpretation). It structures the interactive and interpretative process between persons, groups, hardware, software, databases, networking, and communication devices between and among people. It is a transactional state-of-affairs.

The Theory: A Model of Informing Systems and Misinforming Information Use

The design of any informing system is the attempt to construct a perspective or view on the meanings moving among people in an organization. This view consists of an understanding of the infoscape and the sources: data acquisition or databases; destinations; databases of people; users; and what happens to information within the organization and the ends-in-view of the system. The informing system is constructed for its consequences; it is a habitual method of attaining those consequences. An informing system is an organization's or an individual's habitual manner of dealing with the environing world. An informing system is a habit of interpretation leading to judgments and actions. With the assistance of informing objects, information is recast in a form which fits the situation. Therefore, this section proposes our conceptualized theory of informing and misinforming systems.

An informing system provides for the standard interpretation of events and situations allowing an organization or person to control or react to its situation in its environing world; an informing system must be flexible to evolve different representations of its information in response to different demands. An informing system is always an informing system-for-a-person. An informing system is a language game; a social construction of reality; and a communication device that operationalizes through various media.

For example: take a 16 oz glass and put 8 oz (measured) of water in the glass. One may say that the glass is half empty (one interpretation) and another may say the glass is half full (a second interpretation). According to Bateson (1972), the "metalogue" of content and context is "muddled" (Figure 3) since "all experience is subjective" (p. 22).
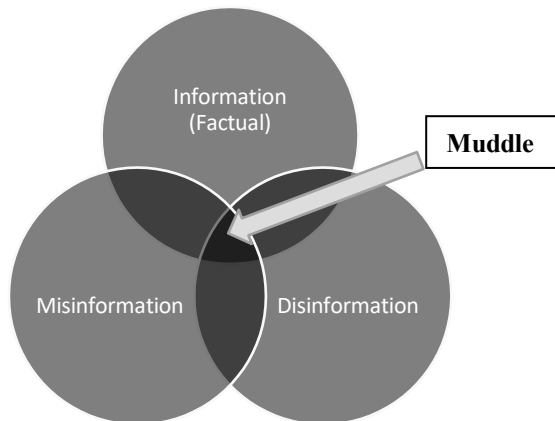
Figure 3. The Muddle of Information

A proposition [information], is either true or false according to its frame, its social conception. Misinforming is a result of frames of information use being shifted, the redirection of information use. *To explain, we proffer the following conceptualized model:*

Given [s]: Information (I) is a proposition (P) about the world [within its frame (F) or information system]. Information use = Information (conception + relationship + consequence : representation) + ends-in-view + tasks (activities).

For example: X informs Y that P (via p) if P+ (is true) [within F]. If the receiver perceives the information as truthful = P+. X misinforms Y that P (via p) if -P (false) [within F]. If the receiver perceives the information as false (misinformation) = -P.

NOTE: Regardless of the originator, nature, content, materiality, context, cultural influence, and substance of the communicated information, the information transmitted can be perceived as true or false by the sender; but it can also be perceived as true or false when interpreted by the receiver, as well [depending on the frame].

With a nod to Shannon (1948) and building upon Fox's (1983) initial conceptualization, Figure 4 depicts our Frame of Informing Systems and Misinforming of Information Use. Table 1 presents the Legend as a key to understanding our model.
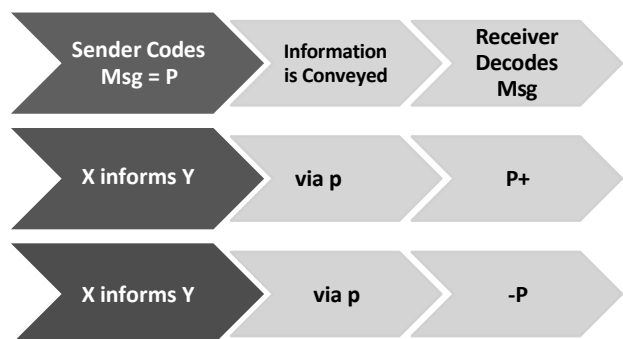

Figure 4. Frame (F) of Informing and Misinforming Systems of Information Use

Table 1. Legend for Figure 4

F	Frame
I	Information
P	Proposition
p	Conveyed Information
P+	True Proposition
-P	False Proposition
X	Person 1
Y	Person 2

The difference between informing and misinforming seems to hinge on, or ultimately depend upon, the fact that sometimes what one person tells another is true and sometimes it is false. "Indeed, one is inclined to divide all cases in which X tells Y that P (Proposition) into two mutually exclusive and exhaustive clauses on the basis of whether p [conveyed or communicated information] is true or false" (Fox, 1983, p. 118).

Conclusion

An informing system is a metaframe of information use within organizations. An informing system is a way of conceptualizing states-of-affairs, of relating ideas and relationships to conceptions of situations. In conjunction with an organization's goals and objectives, the system structures the facts of the situation for itself or the events-for-the-system. The situational facts or events-for-the-system are collected from the environment of the system as data for the system (i.e., subject matter for further interpretation).

An organization's goals and objectives are its information requirements, or its informational expectations. Information requirements are explicit specifications of what the organization qua organization needs to know and what people working at their positions need to know to do the job or tasks. An informing system is based on the representation of the information or knowledge people need in order to function in their sociocultural situations, environments, their organizations, such as: businesses, libraries, schools, etc.

An informing system is a method of meeting informational or knowledge needs. Different people in different roles doing different jobs need to know of and about different things-events-which-affect-them. An informing system is an organization's technique. An informing system is a method of manipulation and restructuring and keeping any reformulation in harmony with the underlying sense of the system's databases. This is to say that a system's manipulating of its databases does reform or restructure the information but the informing system provides the continuity needed by the users of its system. The informing system does this by providing the data or the givens for the system in some organized manner basic to the meaning of the data for the system and its organization. The goal of the informing system remains to assist people within the infoscape to solve problems and make decisions.

Our conceptualized Model of Informing Systems, including Misinformation Use that resides within the metaframe of organizational infoscapes, does not address the relationships and cultural influences between people and among and between groups. Those systems of meanings and understandings related to true and false information will be further explored by this research team (in a subsequent study) and surely by other anthropologists, sociologists, ethnographers, communication professionals, and informationists. It is important to continue this research to understand, mitigate, and resolve erroneous information transmission misunderstandings with the goal of improving communications (at all levels) to increase intended understandings, interpretations, and meanings.

Through our literature review and subsequent development of the theory, we learned that informing systems were ubiquitous and essential to organizational infoscapes; operationalized throughout a metaframe of communication media informing objects (i.e. oral, written, analog, digital, sensory, etc.). Our conceptualized model demonstrated that without knowledge of the facts (i.e., content, context, meaning, cultural influence, delivery method, and the actor's performance) there may be no way*, at present*, to differentiate between true information and misinformation; and the same dilemma holds true for differentiating, *at present*, between misinformation and disinformation. Metaphorically, *truth, misinformation, disinformation, fake news, or truth-decay remains in the eye (interpretation) of the beholder* (Figure 5).

Figure 5. Truth vs. Post-truth (Shovel, M., Jan. 15, 2022). Retrieved from CreativityWorks.com (iaw Doctrine of Fair Use, US Copyright Act of 1976, and as amended).

We encourage and recommend fellow researchers to pursue this topic by applying specific conditions and experiences to assist us with testing our concept, and to employ both quantitative and qualitative methodology approaches to inquiry. We are eager to implement and test our theory, as well, and to share our future findings with the research community.

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