

# Sensemaking

**Sensemaking** is the process by which people give meaning to experience. While this process has been studied by other disciplines under other names for centuries, the term “sensemaking” has primarily marked three distinct but related research areas since the 1970s: Sensemaking was introduced to Human–computer interaction by PARC researchers Russell, Stefik, Pirolli and Card in 1993, to information science by Brenda Dervin, and to organizational studies by Karl Weick.

In information science the term is most often written as “sense-making.” In both cases, the concept has been used to bring together insights drawn from philosophy, sociology, and cognitive science (especially social psychology). Sensemaking research is therefore often presented as an interdisciplinary research programme.

## 1 Sensemaking and information systems

Dervin (1983, 1992, 1996) has investigated individual sensemaking, developing theories underlying the “cognitive gap” that individuals experience when attempting to make sense of observed data. Because much of this applied psychological research is grounded within the context of systems engineering and human factors, there exists a strong desire for concepts and performance to be measurable and for theories to be testable. Accordingly, sensemaking and situational awareness are viewed as working concepts that enable us to investigate and improve the interaction between people and information technology. Within this perspective, it is recognized that humans play a significant role in adapting and responding to unexpected or unknown situations, as well as recognized situations.

After the seminal paper on sensemaking in the Human-Computer interaction field in 1993,<sup>[1]</sup> there was a great deal of activity around the understanding of how to design interactive systems for sensemaking. Workshops were held at prominent HCI conferences.<sup>[2]</sup>

Klein et al. (2006b) have presented a theory of sensemaking as a set of processes that is initiated when an individual or organization recognizes the inadequacy of their current understanding of events. Sensemaking is an active two-way process of fitting data into a frame (mental model) and fitting a frame around the data. Neither data nor frame comes first; data evoke frames and frames select and connect data. When there is no ad-

equat fit, the data may be reconsidered or an existing frame may be revised. This description resembles the Recognition-Metacognition model (Cohen et al. 1996), which describes the metacognitive processes that are used by individuals to build, verify, and modify working models (or “stories”) in situational awareness to account for an unrecognised situation. (Such notions also echo the processes of assimilation and accommodation in Piaget’s (1972, 1977) theory of cognitive development.)

## 2 In organizations

In organization studies, the concept of sensemaking was first used to focus attention on the largely cognitive activity of framing experienced situations as meaningful. It is a collaborative process of creating shared awareness and understanding out of different individuals’ perspectives and varied interests. The work of Weick<sup>[3][4][5][6]</sup> in particular has dealt with sensemaking at the organizational level, providing insight into factors that surface as organizations address either uncertain or ambiguous situations.

Sensemaking has seven properties<sup>[5]</sup>

1. **Identity** and identification is central – who people think they are in their context shapes what they enact and how they interpret events (Pratt, 2000, Currie & Brown, 2003; Weick, Sutcliffe, & Obstfeld, 2005; Thurlow & Mills, 2009; Watson, 2009).
2. **Retrospection** provides the opportunity for sensemaking: the point of retrospection in time affects what people notice (Dunford & Jones, 2000), thus attention and interruptions to that attention are highly relevant to the process (Gephart, 1993).
3. People **enact** the environments they face in dialogues and narratives (Bruner, 1991; Watson, 1998; Currie & Brown, 2003). As people speak, and build narrative accounts, it helps them understand what they think, organize their experiences and control and predict events (Isabella, 1990; Weick, 1995; Abolafia, 2010) and reduce complexity in the context of change management (Kumar & Singhal, 2012).
4. Sensemaking is a **social** activity in that plausible stories are preserved, retained or shared (Isabella, 1990; Maitlis, 2005). However, the audience for sensemaking includes the speakers themselves (Watson, 1995) and the narratives are ‘both

individual and shared...an evolving product of conversations with ourselves and with others' (Currie & Brown, 2003: 565).

5. Sensemaking is **ongoing**, so Individuals simultaneously shape and react to the environments they face. As they project themselves onto this environment and observe the consequences they learn about their identities and the accuracy of their accounts of the world (Thurlow & Mills, 2009). This is a feedback process so even as individuals deduce their identity from the behaviour of others towards them, they also try to influence this behaviour. As Weick argued, "The basic idea of sensemaking is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs" (Weick, 1993: 635).
6. People **extract cues** from the context to help them decide on what information is relevant and what explanations are acceptable (Salancick & Pfeffer, 1978; Brown, Stacey, & Nandhakumar, 2007) Extracted cues provide points of reference for linking ideas to broader networks of meaning and are 'simple, familiar structures that are seeds from which people develop a larger sense of what may be occurring.' (Weick 1995: 50).
7. People favour **plausibility over accuracy** in accounts of events and contexts (Currie & Brown, 2003; Brown, 2005; Abolafia, 2010): "in an equivocal, postmodern world, infused with the politics of interpretation and conflicting interests and inhabited by people with multiple shifting identities, an obsession with accuracy seems fruitless, and not of much practical help, either" (Weick 1995: 61).

Each of these seven aspects interact and intertwine as individuals interpret events. Their interpretations become evident through **narratives** – written and spoken – which convey the sense they have made of events (Currie & Brown, 2003).

### 3 Other applications

Sensemaking is central to the conceptual framework for military **network-centric operations** (NCO) espoused by the U.S. Department of Defense (DoD) (Gartska and Alberts, 2004). In a joint/coalition military environment, sensemaking is complicated by numerous technical, social, organizational, cultural, and operational factors. A central hypothesis of NCO, however, is that the quality of shared sensemaking and collaboration will be better in a "robustly networked" force than in a platform-centric force, empowering people to make better decisions. According to NCO theory, there is a mutually-reinforcing relationship among and between individual sensemaking, shared sensemaking, and collaboration.

In one application, sensemaking is approached as the ability or attempt to make sense of an ambiguous situation. More exactly, sensemaking is the process of creating **situational awareness** and **understanding** in situations of high complexity or uncertainty in order to make decisions. It is "a motivated, continuous effort to understand connections (which can be among people, places, and events) in order to anticipate their trajectories and act effectively" (Klein et al., 2006a).

In defense applications, sensemaking theorists have primarily focused on how shared awareness and understanding are developed within **command and control (C2)** organizations at the operational level. At the tactical level, individuals monitor and assess their immediate physical environment in order to predict where different elements will be in the next moment. At the operational level, where the situation is far broader, more complex and more uncertain, and evolves over hours and days, the organization must collectively make sense of enemy dispositions, **intentions** and capabilities, as well as anticipate the (often unintended) effects of own-force actions on a complex system of systems.

### 4 See also

- Situational awareness
- Knowledge management
- Augmented Cognition or Intelligence Amplification
- Brenda Dervin
- Karl Weick
- Trikonik
- Cynefin

### 5 References

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## 6 External links

- Sensemaking Symposium Report 2001
- CCRP Research – Sensemaking
- The Sensemaking Methodology Site
- “Sensemaking” at TCW
- “Sensemaking in Organizations” by Karl E. Weick
- Sensemaking and Enterprise 2.0 \ Web 2.0 technology
- Glossary of Sensemaking Terms
- Global Sensemaking group

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