

Sensemaking in Project Management ¹

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This article looks at the Mann Gulch disaster as an analog for how project teams perform when faced with significant and rapidly evolving events. While written from the perspective of engineering and construction projects the lessons are broadly applicable. The concept of sensemaking and its importance when regular processes are overwhelmed is explored and lessons observed and to be learned are framed in the context of engineering and construction projects.

Introduction

In 1993 Karl E. Weick published a poignant piece on “The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster.” Subsequently this fire disaster was made famous in Norman Maclean’s “Young Men and Fire².” This paper will not provide a full recounting of the events that led to the death of 13 men during the fire but focus on extracting some lessons learned applicable within the complexity of the engineering and construction industry and our largest and most complex projects. The author commends both the original lecture by Weick and Maclean’s book to readers. A reviewed article which provides a foundation for this article represents a good starting point³.

What drew my attention?

My attention to the Mann Gulch disaster was drawn by the fires ravaging the western United States in 2020/21. In looking at historical context and importantly lessons to be learned that are more broadly applicable, I came to learn of the Mann Gulch disaster. Analogs for dealing with events of scale and their attendant complexity is something which the author has focused on since just before 9/11 and most certainly in its aftermath.

What was the Mann Gulch disaster?

The August 1949 fire began with a lightning strike of a dead tree starting a small fire in the Mann Gulch area of Montana. The fire was spotted the following day and was trending to an explosive potential when a plane-full of smokejumpers were dispatched later in the day. The smokejumpers included former military and forestry students and from the

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² <https://press.uchicago.edu/ucp/books/book/chicago/Y/bo26756813.html>

³ https://www.nifc.gov/safety/mann_gulch/suggested_reading/The_Collapse_of_Sensemaking_in_Organizations_The_Mann_Gulch.pdf

beginning of the response the group encountered unexpected challenges⁴. Of the fifteen smokejumpers and the ranger who they met up with who had been fighting the fire alone, only three survived⁵. The small Class C fire (up to 99 acres) at the time they arrived ultimately engulfed 4,500 acres and took 450 men five days to get under control.

At its most fundamental level the lessons to be learned go to how temporary organizations (projects) can unravel.

What is sensemaking?

Sensemaking is the process by which people give meaning to their collective experiences. Its introduction into organizational studies was intended to shift the focus from decision-making and towards the processes that constitute the meaning of the decisions that are enacted in behavior⁶.

Shortly after his original lecture on the Mann Gulch disaster, Weick identified seven properties of sensemaking:

1. Identity and identification is central – who people think they are in their context shapes what they enact and how they interpret events.
2. Retrospection provides the opportunity for sensemaking.
3. People enact the environments they face in dialogues and narratives. As people speak, and build narrative accounts, it helps them understand what they think; organize their experiences; control and predict events; and reduce complexity in the context of change management.
4. Sensemaking is a social activity in that plausible stories are preserved, retained or shared. The audience for sensemaking includes the speakers themselves and the narratives are both individual and shared.
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

⁴ One smokejumper became sick on the turbulent flight and resigned on landing; radio parachute did not open and it was destroyed

⁵ Two survived by working in close partnership to find an unlikely way out of the way of the fire. The third, the team leader, had provided direction to the full team to take an unlikely action (setting a small fire and lying down in its ashes, letting the larger fire pass this burned out area) but the prerequisites of a true team and trust in leadership were not present.

⁶ <https://en.wikipedia.org/wiki/Sensemaking#:~:text=Sensemaking%20or%20sense%2Dmaking%20is,409>

their accounts of the world. This is a feedback process so even as individuals deduce their identity from the behavior of others towards them, they also try to influence this behavior. "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. 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 favor plausibility over accuracy in accounts of events and contexts: "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).

As we look at some of the lessons learned from the Mann Gulch disaster sensemaking becomes central.

Lessons of interest for projects

While the Mann Gulch disaster is about a fire and how a temporary group of people responded, it is also a good study of team behaviors when the unexpected suddenly arises. The time frames of Mann Gulch may be shorter than some of the disruptions experienced in projects but this only serves to bring lessons learned into sharper focus.

The lessons that follow suggest team attributes that become essential when organizations are put under stress but also how to deal with the associated stresses and uncertainties. They include:

1. Cognitive lock (a 10:00 fire⁷ expectation) can delay recognizing the potential for events to cascade towards catastrophic behaviors.
2. Organizations are susceptible to a range of vulnerabilities, including a loss of "meaning", when confronted with rare, low probability events. They struggle to make sense of what is happening.
3. Shared culture is important but the social construction of the organization is essential. Informal networks are important.

⁷ A 10:00 fire was one which smokejumpers expected they would extinguish by 10:00 AM the next morning.

4. An organization's ability to respond is negatively impacted when a sudden severe disruption impacts both its ability to make sense of what is happening and its ability to rebuild that sense.
5. Loss of structure (under sudden stress and disruption) creates anxiety and impacts the ability to make sense of a changed situation and strategies to respond. Structure (decision making) and sensemaking (often informally based) are both required to respond to sudden disruptive events.
6. Situational assessment and contextual rationality argue for a more pragmatic deployment of power to make decisions under uncertainty and in the face of rapidly evolving events.
7. Organizations must be able to provide shared meaning in the face of contradictions and uncertainty.
8. Denial of what facts are telling us versus what we expect to be seeing delay timely actions in organizations. Organizations model behaviors of senior, more experienced individuals, hesitating to flag their concerns.
9. Communication in rapidly evolving situations is essential so that organizations can understand and act on instructions which seem to be inconsistent with their understanding and established processes. Different individuals see different, limited aspects of the evolving situations and without rapid effective communication decisions will be either sub-optimal or not accepted or understood by those with a more limited perspective.
10. Direction provided to the organization under stress must be repeated and acknowledged. Confidence in leadership's capabilities may delay timely implementation.
11. Situational leadership involves others acknowledging where leadership currently resides.
12. Maintaining a sense of identity and team are essential. Disintegration of either leads to unacceptable outcomes.
13. Emotional support of teams under stress is essential.
14. Leader-follower relationships are essential for organizational stability. In turn organizational stability, even if through informal networks is essential to accessing new ideas, solutions and thinking.
15. Team-based sensemaking is essential to match the complexity often associated with sudden severe disruptions.
16. Response to highly disruptive events often traces back to the steps put in place before the events – roles staffed by individuals familiar with their needs (management and social skills over technical expertise); needed roles not left vacant; organizational clarity and certainty. All are required to deal with ambiguity and rapid change in context.

17. Creativity is essential when dealing with low probability events and can be developed in organizations and individuals. Use what you know to go beyond what you currently think. Innovate.
18. Improvisation is a key skill for individuals dealing with sudden uncertainties, enabling them to adapt to rapid change and accept changes in their role in an evolving team context.
19. The more we know, the more we recognize how much more there is to know.
20. Extreme confidence and extreme caution hold back organizations and teams when change is most needed.
21. Curiosity, openness to new ideas and approaches, and sensing the complex and evolving subtleties of a rapidly changing situation are essential in dealing with impactful and sudden disruptions.
22. Face-to-face communication is essential in rapidly changing situations.
23. Partners and small teams foster improvisation and new ideas to deal with uncertainty.
24. Trust, honesty and self-respect are important elements of behavior under crisis and need to be patterned in teams before crisis arises.
25. Non-stop communication is crucial to coordination of complex organizations and teams susceptible to potentially catastrophic situations.
26. Organizations under stress require superordinate goals that transcend the interests of each individual.
27. Informal structures represent shared interpretation (create meaning) and social construct of an organization. Formal frameworks, roles, procedures and authorities provide constraints and facilitate meaning. The formal and informal must act together to sustain or recreate stability and ensure continued meaning.
28. Social sensemaking must provide both an ability to challenge traditional perceptions (cognitive lock) as well as create new shared ones under stress.
29. Nature of the requirements for team-based relationships changes under a changing, less-stable environment. As instability or uncertainty rises there is a need for alignment and agreement over what is being perceived, increased empathy, strengthened sense of team, and complete candor.
30. Small unrelated flaws can combine disastrously when stressed.
31. Teambuilding before crisis is essential. This requires trust, honesty and self-respect.
32. Under uncertainty teams must ensure understanding by asking questions; advocating their views and perceptions; and raising concerns when they are unsure of actions being taken (or not taken) by others.
33. Leaders must recognize their own fallibility and engage their teams to help fill the gaps.

Summary

The Mann Gulch fire is a study in leadership, team building and behavior. The drama of the story of the smokejumpers is worth reading or watching but has not been recounted in this article. The lessons observed are applicable to how we build and sustain teams in our temporary organizations (projects). The lessons emphasize the importance of informal as well as formal structures.

Sensemaking, how a group goes about building a shared understanding of a situation that is rapidly changing and lacks clarity, is an essential element in responding to change. Team composition and dynamics, before a highly disruptive event, become even more important.

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Bob Prieto is a senior executive effective in shaping and executing business strategy and a recognized leader within the infrastructure, engineering and construction industries. Currently Bob heads his own management consulting practice, Strategic Program Management LLC. He previously served as a senior vice president of Fluor, one of the largest engineering and construction companies in the world. He focuses on the development and delivery of large, complex projects worldwide and consults with owners across all market sectors in the development of programmatic delivery strategies. He is author of nine books including “Strategic Program Management”, “The Giga Factor: Program Management in the Engineering and Construction Industry”, “Application of Life Cycle Analysis in the Capital Assets Industry”, “Capital Efficiency: Pull All the Levers” and, most recently, “Theory of Management of Large Complex Projects” published by the Construction Management Association of America (CMAA) as well as over 800 other papers and presentations.

Bob is an Independent Member of the Shareholder Committee of Mott MacDonald and a member of the board of Dar al Riyadh. He is a member of the ASCE Industry Leaders Council, National Academy of Construction, a Fellow of the Construction Management Association of America and member of several university departmental and campus advisory boards. Bob served until 2006 as a U.S. presidential appointee to the Asia Pacific Economic Cooperation (APEC) Business Advisory Council (ABAC), working with U.S. and Asia-Pacific business leaders to shape the framework for trade and economic growth. He is a member of the Millennium Challenge Corporation advisory board where he had previously served. He had previously served as both as Chairman of the Engineering and Construction Governors of the World Economic Forum and co-chair of the infrastructure task force formed after September 11th by the New York City Chamber of Commerce. Previously, he served as Chairman at Parsons Brinckerhoff (PB) and a non-executive director of Cardno (ASX).

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