National and Occupational Culture Factors in Safety Culture

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Safety Culture

Safety culture as a concept has suffered the same fate as *culture* itself. Theoreticians, safety professionals, members of different occupations in different industries have chosen to define it in terms of their particular goals and have produced, therefore, a lot of confusion about what *safety culture* is and whether it can usefully be generalized to help understand safety problems in different industries and cultures. made most clear recently Amalberti's (2013) has reviewed of the history of this concept and pointed out that the safety problem itself differs greatly by type of industry.

In my own working in the safety area with power companies, INPO and WANO I would add that how people view safety and how cultural factors impactsafety issues also is influenced by national cultures and, even more importantly, by occupational cultures. In this paper I want to show that there are many cultural factors that need to be taken into account when analyzing safety problems, but this understanding hinges first on understanding the concept of culture itself because it also has come to mean many different things.

Definition of *Culture*

I want to begin by clarifying the concept of culture. The word can, of course, be used in any way that a given person chooses, but for *culture* to be a useful concept in socio-technical analyses of safety phenomena it is necessary to stick to a definition that anthropologists have evolved and that I have applied to organizational and group phenomena. *Culture* is best thought of as what a group has learned throughout its history in solving its problems of external survival and internal integration (Schein, 2010). It is best conceptualized at its core as *shared, tacit assumptions that have come to be taken for granted and that determine the members' daily behavior.*

These assumptions are usually not stated explicitly because they have come to be taken for granted. Where did they come from? In the history of the group there will have been founders and leaders whose own values were imposed on the group and, if that group survived and thrived, came to be taken for granted as the right way to think, feel and behave. Sometimes these assumptions are stated as *norms of behavior* or descriptively as *the way we do things around here.* A quick test of what some of those norms are is to observe how newcomers in the group are socialized and what kind of behavior is immediately punished. So one can describe cultural phenomena at a behavioral level, but one must always consider the underlying tacit assumptions on which

the behavior is based. So the only sensible way to describe a "safety culture" would be in terms of some tacit taken for granted beliefs and assumptions.

A relevant question is how one deciphers these tacit taken for granted assumptions. There are many questionnaires and surveys that purport to measure "culture," but most of them deal only with selected elements of any given culture, usually dealing with how employees feel about their organization. Culture involves many other dimensions that the surveys do not cover, so if one wants to get at the root elements or the DNA if culture, and, since culture is a *shared* phenomenon the best approach is group interviews of selected members of the group/organization (Schein, 2010). In these group interviews the culture model is first presented to show that culture manifests itself at the surface artifact level in the kind of climate that exists in the organization and in the behavior that members exhibit. The behavior that is exhibited is usually justified by various espoused values but the group typically discovers that there are disconnects between what goes on and what the values espouse.

For example, most organizations in the U.S. espouse teamwork but realize that all the reward and incentive systems are individually based. If one then asks *why* everything is individually based, the deep assumption comes out that we assume that only individuals can really be held accountable for whatever happens. We then realize that nations differ dramatically on the degree to which they are based on deep individualistic or communitarian assumptions. In the U.S. the teamwork value is espoused but the deeper assumption is one of individual accountability. So, for example, in one company of this sort they went through group exercises to reach consensus but decisions did not stick. The effective managers went outside the group after the meetings and made deals with all the others on whom they were dependent. The key to deciphering this was to ask groups in the organization *why* the group decisions did not stick.

Even the ethnographer who spends a lot of time in the organization will need to ask groups *why* they do certain things. In the safety arena a common problem is why certain clear rules are sometimes violated by operators. In working with the front line people in an organization, the union, an innovative approach that is used by a consultant colleague of mine brings together groups of workers and asks the following series of three questions: 1) What are some of the important rules about doing this work? When a number of them have been identified, he asks the second question for a given rule: 2) Is it ever OK to break these rules? When? (Invariably he gets a bunch of examples). He then picks one example and asks: 3) *Why* is it Ok to break the rule in that situation? It is the third question that reveals the deeper layer of the culture of the operators as a group.[1] What is then often discovered is that the operators don't believe in the rule or break it to get the job done. In one case in N.Y. operators did not wear their safety glasses on a hot day down in the manholes because they steamed up so they could not see what they were doing.

An interesting example along these lines from medicine concerns Atul Gawande's (2007) description of the program of getting doctors to wash their hands more frequently. After various kinds of persuasion programs and rules had been promulgated, the

[1] Steve Simon has used this technique with members of unions who often pay lip service to management's safety programs but clearly have their own view of what is and what isn't safe.

percentage of hand washing was still not high enough. Finally someone brought groups of doctors together and asked them sincerely: "Given all we know about the importance of hand washing, *why don't you wash your hands at prescribed times and places?"* The doctors then revealed all kinds of reasons about the inconvenience and the loss of time involved which led among other things to the installation of the many easy hand washing boxes that are now mounted all over the place.

The crucial point about this definition of culture is that *culture is a property of a group.* One definitional problem is to decide whether culture is a stable property of a group that serves important functions for the group or is a perpetually emerging set of understandings among the members of the group as they interact with each other and make sense of their current reality. The argument for the latter view is that it acknowledges the reality that culture is in a perpetual process of transformation as new leaders and new members with their own views of reality enter the group. My own view is that culture is both, in the sense that as humans we have a skeleton and a set of memories that change very slowly, i.e. the equivalent of tacit assumptions, and our daily experiences that are constantly reforming who we are and how we operate, i.e. the surface sense making to both reinforce and evolve the cultural elements. For purposes of understanding safety, it is my contention that we must look at the basic assumptions, the skeleton in each group's culture in terms of deep beliefs and assumptions about the importance of life and health.

What "Cultures" are Relevant?

If culture is a property of a group, what kinds of groups need to be analyzed in terms of their safety assumptions? Relevant groups can be a nation, an ethnic group, a religion, an occupation or profession, an industry, an organization, a subunit of an organization, or even a team if the members have enough of a shared history to have evolved shared assumptions about who they are. It would thus make sense to say that an airline, or a nuclear plant, or the oil industry in a given country each has a culture based on its unique history and the nature of its technology. Within that culture there will be a set of shared assumptions about how to manage the safety issues that may arise.

For example, the safety issues in shipping, mining, drilling for oil, chemical plants and refineries, and electronics or information industries are vastly different both in terms of the risks and dangers, and in terms of the mentality of the employees doing the work. A training program that works well in construction or mining might be completely useless in a chemical or nuclear plant, and a program in the nuclear industry might not work in the airline industry. The risks and consequences of accidents are very different by industry.

That subset of assumptions about safety in a given industry or organization or group could be loosely labeled as its "safety culture." But note that "safety" is not a group that can be the locus of a culture. Safety is a goal that is presumed to be more or less reachable if the culture of that group has within it assumptions about behavior that will make the group more or less safe. Note also that, to the extent that cultures differ in different industries, the subset of assumptions about safety will also differ to an unknown degree (Amalberti, 2013).

Furthermore, each industry will have organizations with different histories, different kids of leaders and managers within it, leading to different organizational cultures that impact how safety will be handled. Clearly the culture of Tokyo Electric with regard to the Fukujima plant differed from how other nuclear plants in Japan handle safety. But most important of all, I have argued, that it is the key *subcultures* within an organization that have their own subsets of assumptions about safety which makes it dubious that one can even attribute a single set of safety related assumptions to an entire organizational unit.

Every organization has at least three generic subcultures—executives concerned mostly about the financial conditions, the designers (engineers) who are concerned about process safety and how to minimize the human factor in operations, and the operators who are concerned with coping with all the surprises and anomalies that crop up even in the most standardized of operations (Schein, 1996). These subcultures have their roots and origins in the occupations and professions. They are connected to occupational reference groups that cut across organizations and larger cultural units, in the sense that some assumptions of the engineering culture or medicine supersede national or ethnic cultural boundaries (or at least are supposed to).

To illustrate, for the ***executive subculture*** in most U.S. organizations safety is defined by maintaining an image of caring about the public and the employee, but the measurement of that "caring" is tied to minimizing public scandals and being below industry average on OSHA statistics of employee injuries. As one executive put it: "I want the world's best *and* cost effective safety program," not realizing that cost is what he was really concerned about. ***Engineers and designers*** would prefer to build in as many safety defenses as possible but they are not granted unlimited budgets. As one pilot who flew both Russian and American planes put it, I prefer the American planes because they have *three* back up systems while the Russian ones only have *two*." The ***operator*** wants good facilities, good training, and, most important, plenty of manpower to get the job done. As one member of an electric company crew working on an outage put it: "When the company decided that a job that used to be done by two people can now be done by one, they may be right, but it can't be done as safely. The point is that within an organization tradeoffs and compromises have to be made in terms of the deep assumptions that the subcultures make about the ultimate safety issues. One executive who had not taken safety programs seriously enough changed his priorities when he could not face yet one more family to explain to them why a family member employee had died on the job.

Beyond the generic sub-cultures we have to consider the cultural variations of the occupations in different industries. Nuclear engineers are taught that their technology is complex and ***unique.*** If that is true, should a plant ever be run by anyone except a nuclear engineer. Would a CEO who came up through the ranks with legal and financial training ever understand enough or get enough respect from the employees to be able to deal realistically with the risks and dangers of nuclear technology? In medicine, should a hospital ever be run by an administrator or should it always have a doctor at its head who understands the culture of medicine? Many hospitals are run by nurses whose occupational culture might overlap enough with the doctor culture to warrant understanding and running a hospital. The point is that the occupations that run any given technology have their own cultures and traditions even across national boundaries.

What of National cultures? Rather than trying to develop broad criteria or processes and labeling them "safety culture" I would suggest a more detailed analysis of how safety issues are viewed in different cultural units in a given industry will be more productive. Thus one would evolve a set of conclusions about the key safety issues in a given industry, taking into account national, ethnic and occupational cultures. Instead of a broad but relatively useless criterion like "there must be trust in the organization," one could compare the specific issues that differentiate the way Japanese, French, German and U.S. nuclear plants are run. If China and India are going to be big future nuclear countries one would develop some cultural criteria that would enable one to assess how safety will be managed in these countries. As a quick aside, I was once told by an American nuclear engineer that the problem with Iran is not their weapons program but that their domestic nuclear design is based on Russian engineering which this man thought was quite unsafe.

This kind of stereotyping is dangerous if it is not followed up by serious research on how different countries and occupations do things. It is alleged, for example, that the Norwegian off shore oilrigs are safer than those of other countries because of Norwegian attitudes toward safety and the importance of life. Does that imply that Norwegians are *better* at creating trust across hierarchical boundaries than other countries? Or should the more relevant finding be that each culture has different ways of dealing with hierarchy, communication and trust, and it is in the details of how it is worked out that we will find the secrets to safety.

Nations differ in the degree of individualism so that might impact the degree to which it is possible to create safety oriented team work in different countries. Nations differ in the degree to which they consider loss of life or accidents to be "the price of doing business," as in some mining companies. An interesting comparison might be how construction is done in different nations as an indicator of degree of concern for safety. Or, thinking occupationally, is it enough to say that top management must drive the safety process? Or should the more relevant finding be that top managers who are ex-nuclear engineers impose a different kind of safety program than top managers who are financial experts or lawyers? In the medical arena there is a good deal of variation in hospital patient safety programs as a function of whether the top executives are doctors, nurses or hospital administrators.

In other words, if we are to take cultural factors in safety seriously we have to accept that the devil is in the details. Only a more refined look at those details will unravel the principles or processes that "safety culture" is supposed to reveal.

Conclusion about Improving Safety

The risks and dangers that make us want "safety" do not derive from cultural factors. They derive from the work itself, the actual tasks that have to be performed that bring various kinds of risks and dangers with them. Culture may have influenced the design of those tasks and cultural factors may influence the kinds and degrees of risk we want to take, but if we want to *increase safety* itself in a given work situation it is the designers, operators and executives aligning their interests and working together to minimize those risks that worry them most that will produce an effective safety program. Such a program will gradually change behavior that will make things safer for both operators

and public, and, as those behaviors become habits and standards, they will become embedded in the cultures of those organizations. And what will often be discovered is that the behavior changes invented by the working group to make things safer turn out to also make the organization more effective. The actual behavior changes, standards, rules and regulations that will derive from such local problem solving will, of course, vary immensely in terms of the kind of industry, the maturity of the technology and the economic conditions, as Amelberti has convincingly shown us.

Perhaps ultimately we will find some workable generalizations across the varieties of tasks that we engage in to make them all more safe. But my own skepticism about the likelihood of finding such generalizations derives primarily from observing my own safety behavior. As I go through my various routines of housework, of taking care of my health, of driving, of fixing things around the house, of taking care of an infant grandchild, I realize that there are rules and standards for all of those activities but, in the end, I make constant choices based on my mood, who else is around observing me, how well trained I am in performing the task, whether I am in a hurry or not, the image I am trying to portray, who is helping me, and so on. The factors, principles or processes that show up in Safety Culture lists are too general to help me or motivate me. In the end it is the task and the people doing it that create their own standards, rules, and behavior patterns.

Perhaps the deepest motive is our human desire to be efficient, neat, elegant in whatever it is that we do. In my observations in the power company, the impulse to do a job more efficiently and elegantly often outweighed the rules of how to do it absolutely safely. Employees wanted to get a job done, not just to meet management productively rules but for their own sense of satisfaction. In that process they often broke rules, just as we sometimes drive too fast for the satisfaction and fun on an empty highway that appears perfectly safe. The only "safe" conclusion about "safety" is that there are no simple answers and there is no ideal safety culture. Each Nation and each organization will have to find the right leaders who launch the right programs for their unique circumstances and keep monitoring to improve those programs.

References

Amalberti, R. (2013) *Navigating Safety: Necessary Compromises and Trade-Offs-Theory and Practice.* N.Y.: Springer.

Gawande, A. (2007) *Better: A Surgeon's Notes on Performance.* N.Y.: Holt, Metropolitan Books.

Schein, E.H. (1996) *Three Cultures of Management: The Key to Organizational Learning*. Sloan Management Review, 38, 1, 9-20.

Schein, E. H. (2010) *Organizational Culture and Leadership, 4th Ed.* San Francisco: Jossey-Bass.