Chapter 4
Organisational Lucidity and the Impact of Subcontracting

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Abstract Trying to assess the impact of subcontracting on safety implies grasping how subcontracting can affect the main ingredients of organisational safety. One of these ingredients is what we will call 'organisational lucidity': the ability of an organisation to perceive, at its different levels, what really happens within its operation processes. After listing both lucidity enabling and preventing factors, we discuss the impact of subcontracting on these factors, with reference to a study recently undertaken within a major airline concerning the impact of subcontracting on flight safety.

Keywords Subcontracting · Organisational lucidity · Safety · Awareness · Organisational silence

4.1 Organisational Lucidity

Counterintuitively, there is no stable correlation between individual competence and safety performance. Safety performance at a given risk exposure level is rather strongly influenced by the proper tuning of one's self-confidence level, the correct matching between real skills and self-perception, in other words by the clear-sightedness or the 'lucidity' of the person.

Something comparable happens at the scale of a whole organisation (Amalberti 2000). One of the fundamental conditions of risk management is the 'lucidity' of the organisation on what is really happening on the 'shop floor'. This feedback about what really goes on at the front line of operations allows control loops to be closed and allows the organisation as a whole, at its different levels and within its different departments, to manage its operational processes as homeostatic ones, in a stable, efficient and safe manner. It directs real-time monitoring to the sensitive points of activity. Upstream, it modulates the preparation of the work, taking into account the risks actually observed or deduced from real-life observations. Downstream, it

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allows the design of future tasks to be adapted to the relevant context, resources to be matched to needs and targets and ambitions to be reconsidered in the light of real conditions.

Organisational lucidity refers to three main domains of awareness. The first one concerns the distance between the real activity (or the work as done), as opposed to the specified tasks (or the work as specified and prescribed) (following Hollnagel). The second one concerns the awareness of the trade-offs between the different dimensions of performance (quality, speed, productivity, finances…) and the different dimensions of risk (various occupational safety risks, various industrial safety risks…). The third one concerns the awareness of the efforts needed to achieve the performance which is achieved. The next sections will briefly review these three domains of awareness.

Organisational awareness of the **distance between work as done and work as specified** is determined by the degree of knowledge that line managers, and then the hierarchical line, have of the way in which the real operations actually unfold. This knowledge results from an upward information flow, starting with the cues provided by front line operators during—whenever they exist—the briefings preparing the activities, the debriefings of the activities, the reporting of anomalies and incidents, as well as during the more or less informal discussions that front line operators may have with their line management. It also results from incident analyses and from observations made by the different management layers during their operational presence or during their visits to the front line.

The limitations of the upward information process have been the subject of numerous studies and publications, particularly the various mechanisms which can limit or prevent the reporting and transmission of information by front line operators. The notion of 'organisational silence' nicely captures the issue. According to Daniellou (2017), 'Organisational silence is a situation where important information—for example for safety—is available at the field level, but does not go up, and therefore cannot be taken into account in strategic decisions'. Morrison and Milliken (2000) argue that

> there are powerful forces in many organisations that cause widespread withholding of information about potential problems or issues by employees. We refer to this collective-level phenomenon as 'organisational silence'. In our model we identify contextual variables that create conditions conducive to silence and explore the collective sensemaking dynamics that can create the shared perception that speaking up is unwise.

Reversely, upwards information flow is facilitated by the establishment of a 'just and fair culture', involving systematic and positive feedback from managers to the operators on the follow-up given to incidents that they report, and more generally on the trust that reigns between these operators and their hierarchy, the sharing of common objectives and the absence of fear of penalties for errors or discrepancies.

However, front line reporting reluctance is not the only component of organisational silence. Daniellou (2017) states that

> Defenses of the same nature can also develop with managers, when they are 'sheared' by the contradictions between the information that comes from their own management and that which comes back from the field. They can, unconsciously, interrupt the upward flow to protect themselves from the contradiction. They thus contribute to organisational silence.

Hence, what is at stake is the whole process of enaction which filters, selects, amplifies, rejects, in short synthesises the bottom-up information flow to make sense of it, and symmetrically transmits, decodes, interprets and instantiates the top-down information flow, to generate decisions and instructions and implement them in actions.

The second key component of organisational lucidity is the awareness of the trade-off management process, which is permanently seeking an acceptable balance between the different dimensions of performance (quality, speed, productivity, financial…) and the different dimensions of risk (various occupational safety risks, various industrial safety risks…). This process is usually underspecified, poorly formalised, and it takes place at the different hierarchical levels of the organisation within meetings and other interaction and communication opportunities. The trade-off consensus is generated through discussions and arguments between different rationales or even conflicts. It is influenced by many factors: the current conjuncture, power ratios and relationships between different departments, horizontal and vertical team dynamics, the company's culture and its dominant values, history of past decisions and the like. Even if part of this process is neither traced nor explicit, or even a taboo (Paries 2019), it always exists. When a necessary trade-off is not properly addressed at the relevant level of the organisation, it will have to be handled at lower levels, by people less entitled and equipped to do so, which will generate more stress and a higher risk of poor decisions (Pariès 2011). Finally, the awareness of trade-offs and their recognition throughout the organisation is a key dimension of organisational lucidity.

The third dimension of organisational lucidity is the awareness of the level of effort and stress needed to obtain the performance which is actually obtained and the awareness of the margins of manoeuvre left before saturation of the safety management capacity.

As stated by Daniellou et al. (2011),[1]

> […] performance achieved does not reflect the human cost required to achieve it. Excellent results (from the point of view of the company's criteria) may have been obtained at a very high cost for certain operators. The fact that they have managed to do what was asked of them says nothing about the personal costs this generated. If reporting only concerned compliance between results and objectives, there would be "nothing to report". Yet this situation is loaded with risks: if the performance has been reached this time but the operators had great difficulty in achieving it, it is probable that a slight variation in the context or a change in person would lead to a non-compliant result.

This is true for safety performance as well, and it does not relate only to what is happening at the front line: it concerns all levels of the operational hierarchy. As a matter of fact, most safety indicators such as the frequency of incidents are lagging, output oriented and refer to past safety performance, while the 'human cost' to achieve overall performance can be seen as one of the potential leading safety indicators.

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From a safety perspective, what is at stake beyond this assessment of the effort needed to 'do the job' is the notion of leeway, or margins of manoeuvre. Metaphorically, it would be very difficult, if not impossible, to drive a car, or even worse an aircraft, without any feedback about the efforts applied to controls, and without a perception of the level of these efforts versus the maximum ones. According to Stephens et al. (2011):

> One strategy that systems employ to remain resilient in the face of shifting demands is the creation and maintenance of margins of manoeuvre, cushions of potential actions and additional resources that allows the system to continue functioning despite unexpected demands.

This strategy includes several means such as reorganisation, changing the pace of actions, borrowing resources or cooperation from other units, changing the goals and the like. This kind of capacity is essential to keep control of safety in a moving and partially unexpected environment (Weick and Sutcliffe 2001). Hence, it is important to understand how, and through which indicators, an organisation is creating and maintaining a proper awareness about this capacity.

4.2 The Impact of Subcontracting on Organisational Lucidity

The aim of this section is to try to estimate the impact of subcontracting on the three dimensions of organisational lucidity presented above. It is based on a study recently undertaken at the request of a major airline on the effects of subcontracting on flight safety. For reasons that are economic (looking for cheaper labour), geographic (providing services in other countries, far from its base) and strategic (refocusing on its core business), airlines subcontract a growing part of their activity. This concerns various activities and services such as documentary systems, information and communication systems, aircraft maintenance, ground handling and ground operations around the aircraft. Some of these activities are closely regulated by international safety regulations and controlled by certification bodies and national authorities dedicated to flight safety, whereas others are still poorly standardised or regulated and are subject to in-house safety management systems.

The study was carried out by conducting around thirty semi-structured interviews of about one hour, by reviewing subcontracting processes and documents and visiting one subcontracted shop floor activity. The interviews were conducted with both the airline staff and subcontractor staff. The interviewees from the airline were managers from different hierarchical levels and involved in subcontracting to different titles. They could be involved at the operational level (e.g. a maintenance or ground operations manager), or as support functions (e.g. a purchasing manager in charge of selecting and contracting subcontractors). The interviewees from subcontractors were a line manager, an HSE manager and a head of operations strategy.
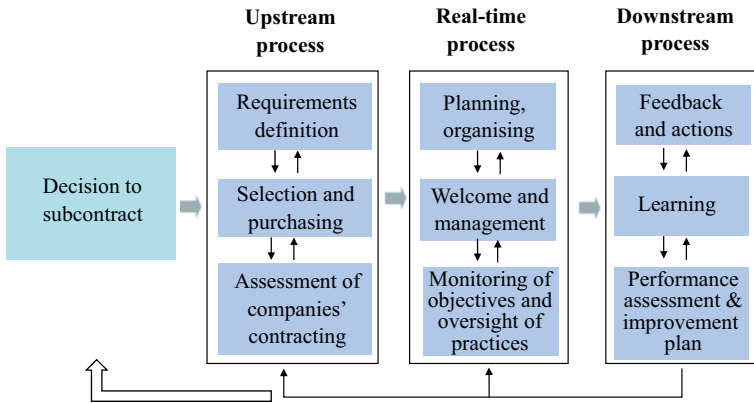
Fig. 4.1 Processes involved in managing subcontracting in an organisation

Overall, the study confirms the diagnosis made in the 'Cahier de la Sécurité Industrielle' (ICSI 2006)[2]:

On the one hand, subcontracting increases the number of interfaces between people working on the sites, which can hamper the transmission of information and therefore have a negative safety effect. On the other hand, subcontracting allows the development of more specialized skills in certain activities, facilitates the transfer of good practices between industrial sectors, and allows more flexibility in the face of peaks in labour […].

However, the more specific effects of subcontracting on organisational lucidity can be appreciated in more detail by referring to the overall management system for subcontracting. The overall management of subcontracting is achieved through an upstream, a real-time and a downstream process with reference to the subcontracted activities, as shown in Fig. 4.1.

The study highlighted the following effects on organisational lucidity:

- **A first effect** of the above processes is to increase the specification of the expected outcomes in terms of production, quality and safety. The activity to be subcontracted is accurately defined, and what has been kept implicit until now is made explicit. It leads to more clarity, to more KPIs and more accurate ones. It also leads to a tendency for activities to be monitored more closely, for example by field supervisors who would not be present in non-contracted activities. However, these efforts to increase the knowledge of what is happening on the shop floor are offset by the complexification of relations between the operational management of the company and the actual activities at the front line. The overall result is that lucidity is higher for measurable performance components and lower for non-measurable or non-measured ones, such as the level of effort and stress imposed on workers at the front line. There is a tendency to generate a hypertrophy of performance (outcome) indicators, and an atrophy of effort indicators. Risk-based oversight

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is based on risk perception, which is based on safety outcome indicators, which aggravates the phenomenon. The consequence for the airline is a loss of awareness of the degree of effort, stress and the associated margins of manoeuvre. As already stated above, the performance achieved does not reflect the human cost required to achieve it nor the margins to loss of control. In terms of safety, the consequence is better control of low severity/high-frequency—quality related—events and lower visibility on high severity/low-frequency—loss of control related—events. This is similar to the effects of automation, which improves control within the boundaries of the designed (including for discrepancies) operational domain and decreases it outside.

- **A second effect** of the above processes concerns the management of trade-offs. When the specifications are drawn up with a view to subcontracting a specific activity, the operational managers concerned by this activity are involved in the drafting, and they obviously express the highest possible requirements on the aspects of performance they are concerned with, like quality, deadlines, reliability, all the more so given their wariness of the capacities of the subcontractors. The same goes for the purchasing department, which will seek to obtain the best possible deal, even if given instructions not to systematically choose the lowest bidder. And finally, safety managers will also be very demanding and fussy, probably more than they were before the subcontracting.

Finally, the arbitrations that used to take place within the contracting company in the form of meetings, arguments, power games and the like are now frozen, crystallised in the requirements, not necessarily adapted to the subcontractor's practices and no longer updated or 'thawed' in the daily activity.

The result is that the subcontracting (client) company's goals, constraints and values are expressed by a set of requirements which are partially incompatible with one another and which are not, or only slightly, arbitrated. There is no longer an internal process to generate a trade-off consensus through cultural references and arguments at different levels of the hierarchy. The requirements are addressed to top management of the contracted company, which does not really have the flexibility to discuss them. The trade-offs will therefore be managed by the subcontractor company, within the framework of its own goals, constraints and values, which definitely include pleasing the client company to get the contract and keep it. It follows that the necessary trade-offs may not be properly addressed at the relevant level of the organisation. As discussed above, it will then have to be handled at lower levels, by people less entitled and equipped to do so, not to mention that work environments, tools and procedures may remain dependent on the contractor, while they are not necessarily adapted to the skills and the work habits of the contracted staff. This will generate more stress and a higher risk of poor decisions. This will be all the more challenging for safety when the initial reason for subcontracting is financial, meaning more pressure on front line staff, especially when the saving effort has to accommodate the extra cost of dual monitoring (subcontractor + subcontracted) of operations.

Finally, the effect on organisational lucidity may be a further worsening of the usual situation of poor knowledge of the levels of effort deployed to obtain performance and of residual margins. Indeed, the information feedback mechanisms on this subject in the subcontractor company will surely be affected by symptoms of organisational silence, and the contracting company will only have indirect access to it, filtered by the management of the commercial relationship. If direct cooperation is not instituted for the sharing of this information, the subcontracting relationship behaves like a pink filter in an image-processing tool, which embellishes images and removes wrinkles.

4.3 Conclusion

From a systemic point of view, subcontracting introduces a dissociation in the means-goals hierarchy. While within the same organisation, the different levels of functional decomposition are taken care of by the corresponding levels/components of the organisation, in the subcontracted activities the contracting company says 'what' and the contractor says 'how'. This requires a very precise *dialogue*, not a one-way communication based on domination by one party. In this dialogue, organisational lucidity on the three major points—which are knowledge of real activity, management of trade-offs, and knowledge of effort levels and margins—is essential. It implies partnership rather than domination, joint learning, integration of operational processes, interfaces at the right levels between the contracting and the contractor companies. It should include a long-term vision of the relationship within the 'ecosystem' at stake.

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