Coordination in Hospitals : organized or emergent process?

Towards the idea of Resilience as the agents', groups',

systems' capacity to project themselves into future.

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For many accident analyses concerning complex systems like hospitals, it is not easy to identify where and how the case goes wrong through the course of events. Let aside the benefit of insight, each decision seems to be relevant in its finite temporal interval. The overall failure appears to come from the lack of temporal integration of the decisions and actions distributed in time and across the agents. As organizations, hospitals positively organize the coordination between the activities of their different agents, as well as the associated communication between them. The overall goal is to construct a "common ground" between the agents about the work process. In order to achieve this, a series of management tools are called upon. However these formally designed coordination mechanisms interact with, and may be superseded in real time by, the "emergence-through use" of spontaneous coordination mechanisms. These self-organized coordination mechanisms have been particularly well described and analysed with the free jazz band metaphor. They are generally considered as positive contributors to – if not as the basement of- the resilience of collective performance, through the « loose coupling » they introduce between the system's agents, providing for redundancies, implicit communication, implicit cross-checks, collective senses-making, and the like.

However, contrary to frequent assumptions about sharp end performance, local, self-organized regulations are not always virtuous. Through their interaction with the formal coordination mechanisms, they can disorganize the sequence of operations, as designed through the centralized process, and lead to a major breakdown of the care process, and to an accident. We describe a case study, in which patient suffering from asthma attack has been let in and out of the hospital several time before he ultimately died. We show that each agent, in a kind of individual behaviour, seemed to give precedence to his/her own current perception of the situation based on his/her direct and real time interaction with the patient, and re-started the reasoning process instead of continuing it from colleagues' preceding actions. This behaviour, indeed, created a form of redundancy, but also a kind of action stammering, a fixation on a short-term interval of information that impeded anticipation and projection into future. Such a projection into future seems to be a critical element for handling real time uncertainties and, therefore, a key condition for resilience.

We develop the idea that resilience depends on the agents', groups' and systems' capacity to project themselves into future through (and despite) the current, local, short-term interaction of agents with their environment. The issue here is not to

argue in favor or against one of the two approaches of coordination described above: "centralized and external coordination tools" approach versus "local and emergence-through-use" approach. These two mechanisms are clearly embedded at work, and can both be beneficial in promoting coordination in complex systems. The important avenue for future research is in fact to understand how these approaches actually interact, and might be combined to facilitate the process of resilience and improve safety in complex systems.