

Panel: Communication for Security

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Disaster Theory and Communication

Sketch of an Operational Disaster Theory

Let me start saying all the important things right at the beginning in summing up our whole theory in one short sentence: **crises and disasters are completely and literally man-made**. That is to say that they totally depend on the knowledge, competences and abilities of man, people, organizations or societies to cope with stress, i.e. to operate or work, act, think under stress or pressure. Apparently, this also includes thinking and action to prevent, stand, lower or minimize stress.

Whatever the cause or trigger of stress may be in terms of e.g. environmental damage (like in the case of an earthquake, flood, blizzard or fire) it is secondary with respect to the **personal, organizational or societal experience** related to that, namely the experience of a kind of **disturbance** of the usual or regular business or way of life, like e.g.

- **obstruction**, slow down, delay or protraction in reaching goals and provoking or creating effects, the
- **interruption**, falter, slacken, stop short or congestion (like in a traffic jam), the
- **shortages** (of naturally available resources), the
- **experience of failure or break down** (of knowledge, competencies or abilities, social relations, organizational or societal structures or functions), the
- **experience of mistakes** or of things running terribly wrong, unexpected and unintended, finally the
- **experience of a loss of opportunity**, a blockade of further action or of the apparently/seemingly adequate reaction to some observed demands
- **experience of impossibility** of any further action (demonstrating that there are true operational limits with regard to the situation, time to act, space to move, knowhow and availability of necessary resources)

Experience, here, refers to the perception of self and environment, the way a person looks at the world, views her- or himself. Experience also means feeling the own body moving, realizing how it feels to do this and that, how it feels to think and to decide for one thing instead of another. Also, experience includes memory, intuition and reason, the lessons learned and the competences, knowledge and abilities acquainted so far. At the level of organizations the experiences of the members mutually interfere in their respective action which become manifest or materialize in organizational structures and procedures, principles and rules, self-concepts and plans for change.

In this sense, our operational approach is also kind of a relativity theory of crisis and disaster because knowledge and abilities differ from person to person, from organization to organization, from society

to society. And, saying this it, becomes also obvious that crises and disasters show some kind of cultural relativity.

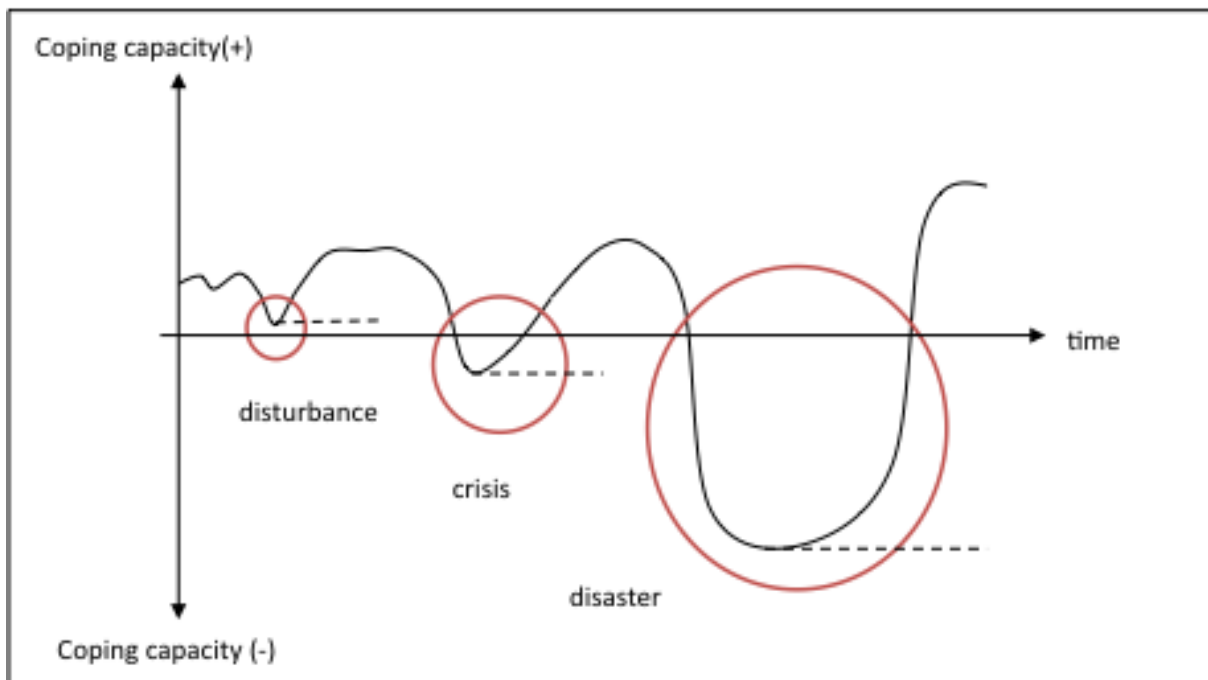


Fig. 1 Relation of coping capacity, irritation or stress and critical loads of stress

=> So, to come to a first conclusion we don't take crises and disasters as external environmental incidents or events, but as the stress, the irritation and pressure which is experienced by an individual, an organization or even a whole society. **Crisis and disaster** may, therefore, be identified along a line of increasing **stress impact on cognitive, social or socio-technical systems**. If we measure this impact in terms of the **capacity or ability to cope with stress** we may identify different levels of that coping capacity following the slipping line from disturbances through crises up to disasters.

Crisis, Disaster as Systemic Stress - Crisis through Security

What it is that stresses a system clearly depends on the system itself, its nature and sensitivity, its robustness, resilience or resistance.

Thus, usual, regular or natural working or functioning of a cognitive or social system (which is free from exceptional stress amplitudes) describe the kind of setting of conditions which at the same time, do define the bandwidth of physical and cognitive/affective system states taken as "normal". Where does that normality come from? And: What does normality mean or imply?

At the micro-level of cognitive systems normality of functioning may be characterized through the kind of freedom of action which grows out of the ability and power to act, i.e. to intentionally change physical and cognitive states, to bring about changes in the environment as effects of moving the body, hands, arms or legs (e.g. touching, grasping, holding, throwing things). Bringing about changes intentionally does imply the ability and the power to identify and reach (through respective behavior) aims or goals.

We may now argue that exactly this ability and power to act essentially is what security means. It is the main and most important prerequisite and source of (self-)consciousness, (self-)confidence,

(self-) control, (self-)reliability and trust in the possibility of making the next step and continue the ongoing action and routines, i.e. trust in the near future. This understanding of security also subsumes that the actor remains physically unhurt. Physical or bodily integrity, here, appears as a precondition of the freedom of action. Physical injury, therefore, becomes a problem depending on its impact on the ability to act, the ability to continue with the ongoing businesses, to reach the present aims and meet the expectations which - as future effects - are associated with the present doing.

=> Again, we may sum up and make the point that all kinds of **irritations of that freedom of action**, all kinds of **irritations of the fluency and efficiency of action** (as already mentioned at the beginning) produce uncertainty and **unsecurity**.

It is in this sense that we speak of an operational approach to crisis and disaster. As long as a system can stand or resist the stress, as long as a system has the knowhow to deal with, get through, and finish with it, there may at best be a **disturbance**.

Operation needs resources (even more in cases of stress)

- **knowhow** (knowledge, ability),
- **time to act** (i.e. operation time, time span needed for doing things),
- **space to act** (i.e. space needed for operation, room to move),
- **operators** (z.B. own body, personnel, rescuer)
- **material** (as tool, as energy, i.e. food, fuel)

Depending on the availability / accessibility of these resources stress may be easily handled or may grow and cause serious trouble.

- **The stress coping capacity is a function of the availability of these resources**
- **Resources as controlling factors**

Fig. 2 Operational resources

=> If the stress cannot be handled within an appropriate time span because there is a lack of **necessary resources** like knowhow, time to act, action space, acting instances (e.g. personnel) or material (e.g. machinery, fuel, etc.) the situation may slip into a **crisis**.

If all the resources from knowhow to material are together lacking at the same the situation becomes **desastrous**.

A Disaster in Slow Motion

Let me give you an example that attracted the attention of the world through the last 8 weeks: the **Deep Water Horizon** case in the Gulf of Mexico.

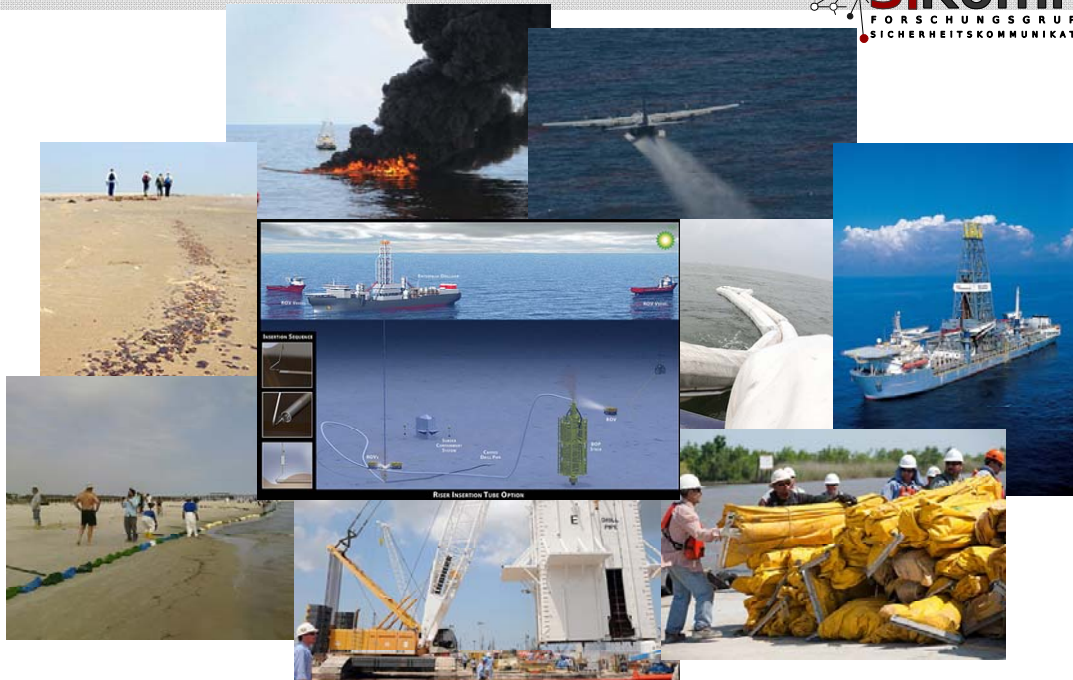


Fig. 3 Deep Water Horizon, April 21, 2010
(<http://www.deepwaterhorizonresponse.com/go/site/2931/> (17.5.2010))

What this case clearly demonstrates is the correlation of lacking knowhow (besides missing other crucial resources) and the escalation of the situation from an accident (an explosion killing workers at the oil rig) to an (almost global) environmental and economic disaster.

The BP-people (among others involved) did not and still do not know how to stop the oil spill; they do not have any technological or environmental solution to end with this and to clean up the ocean and the coasts. Besides the environmental pollution / contamination of the Gulf of Mexico BP is running deeper and deeper into serious economic trouble which in the end may threaten the existence of the whole company.

Clean up and Prevention Strategies



Quelle: <http://www.deepwaterhorizonresponse.com/go/site/2931/>

17.5.2010



Fig. 4 Trial & Error in Coping with the disaster

The BP technical management tried a number of well known strategies which have been successful in earlier cases but now all together failed in spite of lacking experiences with deep water spills and the scale of this challenge. They came up with a number of ad hoc strategies (like the container brought to the ground to take in the spilling oil). Again, these strategies failed or did not work sufficiently well.

Disaster Dynamics - 5 Phases

What lessons may we learn from the gulf spill and all the other examples of break down of people, societies, infrastructures or any other system under stress?

First, we may realize that disturbances, crises and disasters depend on sensitivity and vulnerability of systems. That's why strategies of (technical) prevention and preparedness as well as safety standards are in discussion again.

Second, the respective scenarios run through a number of stages, phases or steps which can be distinguished by the mode of coping with the experienced stress or challenge.

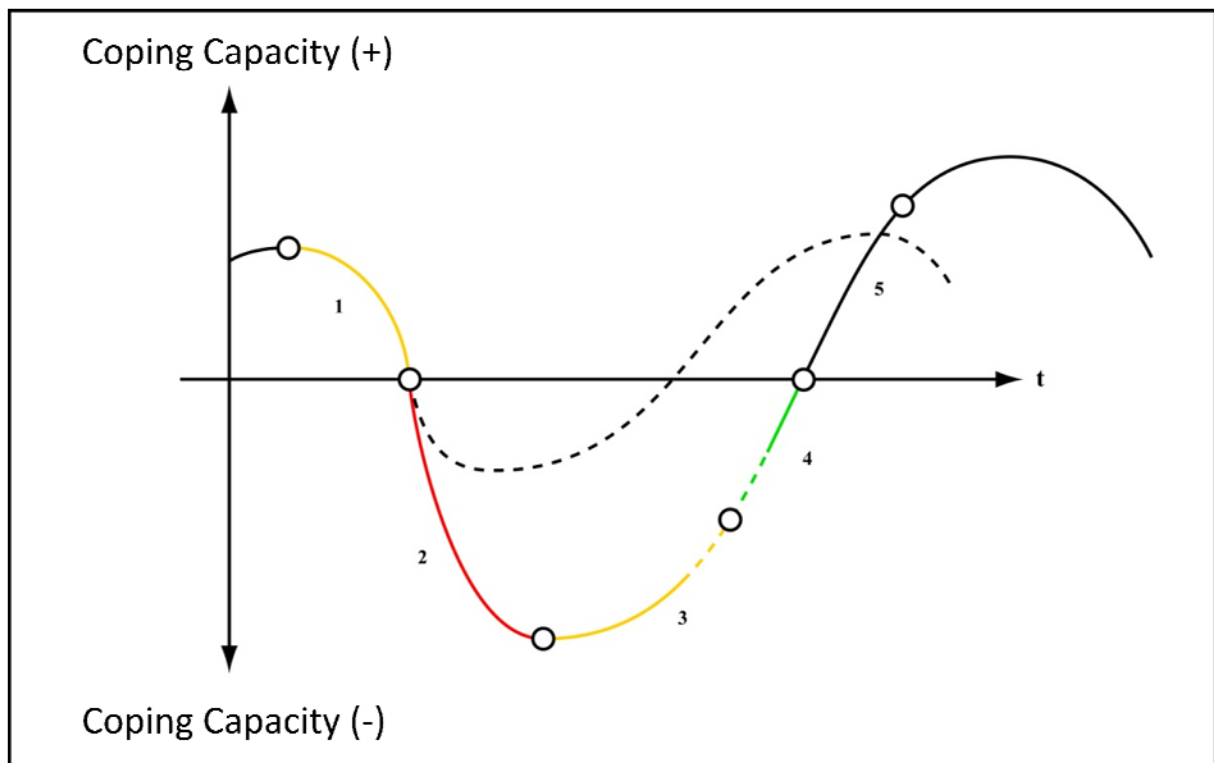


Fig. 5 Disaster Dynamics - Phases

In the case of **disaster dynamics** these phases are:

Phase 1. **Destabilisation**: when the lack of resources (knowhow, time, space, operators, material) becomes obvious through missing or failure of coping strategies.

Phase 2. **Dissociation** / Desintegration: At this stage the situation rapidly escalates, so that no more action can be taken to do something about the acute trouble. Actors become audience, so to say. They can only watch things getting worse. The situation - on from a critical point of time - may change so drastically and rapidly that no more intervention is possible, like e.g. in the very moment of the highest intensity of an earth quake when walls and roofs crash down.

Phase 3. **Contraception**: As soon as action is again possible, actors usually try to prevent things going even worse, do whatever possible to get out or to find shelter, gather and mobilize forces, try to regain some kind of sober mindedness to react properly and adequately.

Phase 4. **Regeneration**: Those who got through that hell have to improvise and find ad hoc solutions to set forth their living. They have to work out strategies of structured and coordinated action to again construct a functioning socio-technical setting for their families, groups and communities.

Phase 5: Finally, a **new normality**, based upon the newly and re-built structures a new version of the community's everyday life will be set up.

Communication for Security

Now we may draw some conclusions from that for matters of communication for security. Let us first identify potential (and later on even the best) intervention points for communication:

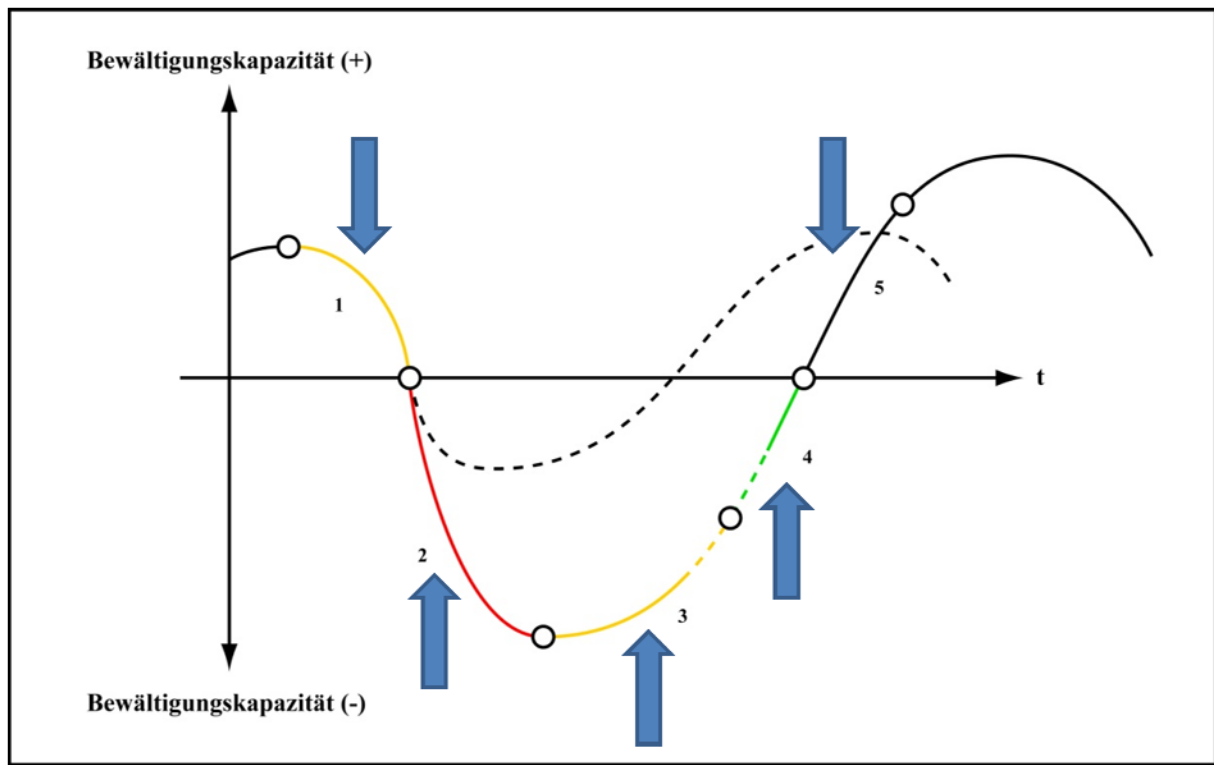


Fig. 5 Disaster dynamics with communicative Intervention Points

We all remember Harold Lasswell's famous formula. For our purposes let's slightly modify it to:

Who communicates when, what, to whom, in which channel and with what purpose in cases of crises or disasters?

Now let us go into some of the thematic focuses of communicative interventions here (see fig. 6):

When	Who	What	to whom	in which channel	for what purpose
Phase 1.	authorities citizens experts advice, help	Knowhow of coping information on resources warning,	citizens experts	mass media social media mass media (personal com.)	Mobilisation, supply, invention of new resources prevention, preparation
Phase 2.	citizens	advice, company, closeness psychol. support	citizens	personal com. social media (mass media)	Assistance (keep up resistance, guide escape, strengthen standing, hold out, keep up sober mindedness)
Phase 3.	citizens experts	knowhow advice information psychol.support	citizens experts	personal com. dialog group (mass media)	Rescue (task forces, citizens, coordination, cooperation, self- organization of civil rescue activities)
Phase 4.	authorities experts citizens	how to participate how to set up a new life	citizens experts	mass media social media	Re-Organisation and Re- Structuration
Phase 5.	authorities experts	lessons: preparedness, resilience advice social history	citizens experts	mass media social media	Reflexion, Learning, build new resources, strengthen resilience, improve stress tolerance and coping capacity