0.1. Foreword

Historically, making psychological urgency aid measures available has in many ways been further developed. From the *emotional first aid* (cf. Neil, Oney, DiFonso, Thacker, & Reichart, 1974) to the professional and scientifically-based crisis intervention that attempts to reestablish “a lost psychological balance with all its partially functional impairments” (Everly & Mitchell, 2002: 16) through the activation of a person’s own resources. Understandably, various tendencies have developed, which can only be evaluated in a well-founded manner if precise details and data are known. Over the past years, the broad area of post-incidental prophylactic measures has been further developed at a level of differentiation that borders on clutter. At the end of the 1980s, Mitchell and Everly’s forms of debriefing within the frame of a “Critical Incident Stress Management” (CISM) claimed to introduce a new “epoch of crisis intervention” (Everly & Mitchell, 2002: 9). Accompanying research and followup studies have in the meantime also cast a critical eye on the effectiveness of CISM-debriefings, and at best these attest that they have “no effect” (Nachtigall, Mitte, & Steil, 2005; Rose, Bisson, Churchill, & Wessely, 2009 and others).

The study presented here sees itself situated within a multiplicity of debriefing forms. It intends to look at a series of case studies in order to examine the effectiveness of CISM debriefing according to the standards of the ICISF[1] and the significance of various criteria for implementation: the peer principle, structural independence of the system of requirements, the time between the incident and the debriefing, possible followup measures, the face-to-face or telephone-contact performance, the "trust" factor between the person concerned and the accompanying person, etc. The study aims at coming to a valid statement as to what is effective in the CISM method and on which factors a possible effect depends, in order thus to enable not only a new evaluation, but also in a given case an optimizing of CISM measures.

When turning to the topic "Critical Incident Stress", it is first of all necessary to look at the multiple definitions of "stress". The first thing one notices is that in the history of research and in literature a difference is made between *stressor, stress and stress reactions* (e.g,. with Smith, Nolen-Hoeksema, Fredrickson, & Loftus, 2007: 643). Over and beyond this, the real definition of the term *stress* determines a certain perspective on the phenomenon. To this day, Hans Selye’s at first more unspecific definition fundamentally marks just about all stress research, whether it be medical, sociological or psychological, and thus has an enormous history of effectiveness (Selye, 1936, 1950). After multiple examination, the following approach prefers one definition of stress that finds orientation in McGrath; this says: "Stress is an event that overtaxes the subject." (McGrath, 1970: 41) This takes into account both the interaction of the "objective" external stressor and the "subjective" inner process of evaluation, as well as the factors determining the

[1] Mission Statement: The mission of the International Critical Incident Stress Foundation, Inc. is to provide leadership, education, training, consultation, and support services in comprehensive crisis intervention and disaster behavioral health services to the emergency response professions, other organizations, and communities worldwide” (http://www.icisf.org/who-we-are).

surroundings. Not least, a broad definition of stress fits well into the "Best-Practice-Tradition" of the CISM measures and their further development.

Through distancing from the stress event, *stress processing* is to be understood as all the "measures activated by the individual through which he or she tries… to encounter, to prevent, to weaken, to shorten, to end … a [stress event], or to adapt to it." (Erdmann & Janke, 2008: 54). The change of focus to the respective individual processes of regulation make clear that thus both behavioral and experiential as well as somatic processes are seen. Therefore, the focus will not be concentrated unilaterally on an exclusively fixated emotional (tendential non-intentional) side, nor on the partially somatic (more intentional) one of the stress processing (cf. Nitsch, 1981, 52).

0.2. Personal Approach

For many years now, there has been professional interest in questions on coping with an individual experience of stress. The author has encountered this in various professional contexts, in various roles such as chaplain, therapist, supervisor and in many other forms of counseling. Previous studies in the area of management (Fröse, 2005) and research in biography (Fischer, 1978, 1978; Richstein, 2009) presented the challenge of shedding light on leadership and guidance – and within these also on the experience of strain – from the various perspectives of biographical contexts. For twenty years now, the author has worked as a volunteer with the Mayday Foundation2, a group of collaborators made up of people with many professions who, in an elaborated procedure care for pilots, flight attendants, and their families who have experienced situations that were felt subjectively to be critical or even life-threatening. Airline companies set up working groups of the foundation in order to alleviate personal situations of need if necessary, as well as to work against the development of chronic complaints and possible unfitness to fly. Over the past years, multiple contacts with active flight personnel were part of the author's every-day work; in addition, his own flying license facilitates access and brings to bear the peer-aspect in counseling contacts. The first chapter follows with some orientations as to the explicitly extensive and confusing thematic area.

[2] The Mayday Foundation supports airmen and -women and their families who are in need,. It was founded by pilots in Frankfurt/M. on December 7, 1994. Material or ideal support is given independently of the cause of the accident, the question of guilt or a clarification as regards juridical insurance questions. For more: http://www.stiftung-mayday.de.

1. ORIENTATIONS

1.1. Orientation: Subject Area STRESS

The word stress is laden with multiple levels of meaning. Etymologically it comes from the Late Latin term *strictiare* (= strict, taut, narrow); from the Latin *stringere/strictus* (= dense, tight, flush, firm)[3], and was later developed in Old French to *estrecier* (= to pressurize) and in New English [*to*] *stress* (= burden, tighten, emphasize, force).[4] Aside from the colloquial use of the word in a field of meaning such as *strained, being burdened, being under* (lasting) *tension* and *not having time* (for one's own priorities), various concepts become clear in the scientific context. In the differentiation of concepts, various meanings are the result not only for stress and stressor, but also for load, load reactions and strain, stress processing and recovery; in the following, these meanings will be presented briefly. Afterward, a differentiated description of stress theories will be given in a biologically and a psychologically oriented strand of research.

1.1.1. Definition of Concepts

Although research on load and strain is one of the oldest areas of psychological study (cf. Richter & Hacker, 1984), the results over the past decades are anything but unambiguous: A sharply separated differentiation between *load* and *strain* can hardly be discerned over the decades before DIN EN ISO 10075 and ÖNORM EN ISO 10075-1:1991. One important definition can be found with Kallus in the differentiation between *load* and *load situation*: "Load is an individual's condition that is bound to a situation, which is characterized by a heightened psycho-physiological activation and negatively toned emotions. A situation is called load situation for a defined population when this situation induces a heightened activation on the physiological level in the majority of cases, and an increase in negatively toned emotions is reported"[5] (Kallus, 1982: 2).

The definition by Rutenfranz/Kleinbeck has proven to be a differentiation with great effectiveness historically, and it was finally included in the fundamental texts of the Federal Labor Court, Germany. In contrast to long-term processing strategies "with direct consequences on the individual's psychological load, depending on his or her respective persistent and momentary preconditions including the individual" processing strategies, *strain* was defined here in order to counteract an inflationary use of the *stress* concept and to have a basis for evaluation in juridical disputes (cf. Rutenfranz & Kleinbeck, 1987; Federal Labor Court of Germany, June 8, 2004, dt. Bundesarbeitsgericht, 8. Juni 2004).

[3] Stowasser, Petschenig, & Skutsch, 1980, 434.
[4] Kluge, 1999: 802.
[5] For the sake of clarity, underlinings in the original text have not been included here.

The concept *load*[6], which in its colloquial use is also ambivalent, shows that both positive consequences which are worthwhile and foster the personality can be connected with it, and that negative consequences can also be recognized (e.g. high psychological costs and a danger to health, etc.; cf. Wieland-Eckelmann, 1992). Already in 1976, Nitsch and Udris drew attention to the fact that psychological "*loads*...[have] a trigger function for counteracting processing procedures"[7] (Nitsch & Udris, 1976: 12). These are understood as "the totality of the detectable influences that the human person encounters from the outside and that work on him and her psychologically" (Richter, 2000: 2). Psychological *strain*, on the other hand, describes "the individual, chronologically direct and not long-term consequences of the psychological load on the human person, depending on his and her individual preconditions and condition"[8] (*ibid*.). Consequently, *strains* are evaluated as *misdemands* when they do not trigger a process of learning or adaptation.[9] Only then do *strains* lead to a cascade of increasing stress symptoms, which based on Hacker and Richter, can be illustrated as follows (cf. Richter & Hacker, 1984):

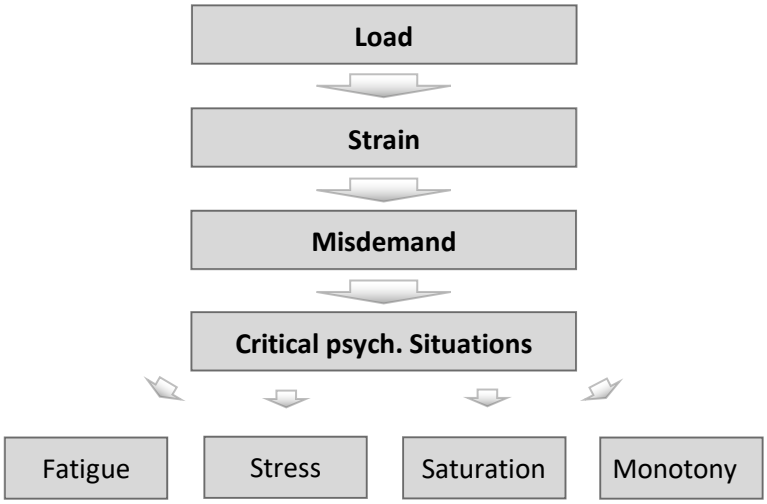


Image 1: Loads, Strain, Misdemand according to Kallus & Uhlig, 2001

Even though the research results presented show a differentiation of contents that make a detailed approach possible[10], literature is nevertheless dominated by the idea that the complexity of the conditioning factors make it hardly possible to situate the concepts unambiguously. It remains both unclear whether the combinations of individual loads can be sumed up to make multiple loads (cf. Dunckel, 1991), or whether combinations are to be understood in an additive or multiplying sense. Frieling and Sonntag have proven that *loads* placed objectively in an experimental order can lead to very different *strains* (cf. Frieling & Sonntag, 1998; also Nachreiner, 2002). *Load* influences seem to depend particularly on the affected individuals' ways of evaluating and processing and on the resources at their disposal (cf. Semmer & Udris, 2007;

[6] Not to be confused with task load, demand or pressure, Kallus & Kellmann, 2016, 35.
[7] Italics by the author.
[8] This can signify situations with too high or too low demands, which impair the individual ability to achieve and to act, as well as the subjective wellbeing.
[9] In order to clarify the use of the concept, Kallus refers to that of the stress concept in physics (mechanics). There, one speaks of load when a force is put on a material and brings with it an elongation in connection with stress. When the load falls away, the material consequently finds its way back to its original form. Stress can also be understood as a force that is stored within the material. With this, it is not the stress that causes the strain, but the elongation and the stress are caused by the load. The stress limit has only been reached when the load reaches such a degree that the material breaks (non-reversible deformation),. "This point is of central importance when transfering the analogy to biological sciences…" (Kallus & Kellmann, 2016: 36).
[10] E.g. according to Schönpflug (1987), the division into six dimensions: origin, quality, influence possibility, anticipation possibility, chronological structure and way of bearing on the affected persons.

Ulrich & Wülser, 2004, 2015). The correlation between *load* and *strain* can thus not be summed up in a simple stimulus-reaction schema (cf. Kallus & Uhlig, 2001;Ulich, 2011). Here, further differentiations can only be alluded to as complementary indications that throw light on loads in view of work tasks[11], role characteristics[12], physical[13] and social surroundings[14], as well as *behavioral settings*[15] and systematic aspects.[16]

The terminology is presented more clearly in the context of biological stress and load concepts.

1.1.2. Biologically oriented Ideas of Stress

1.1.2.1. Selye und Canon: "Hyper- and Hypostress: endokrinological Models"

Already the pioneers in stress research understood the phenomenon also and especially in the sense of an (at times health-threatening) disturbed balance (Cannon, 1914, 1935; Holmes & Rahe, 1967; Selye, 1936, 1950). Since the 1980s, research unanimously differentiates two physiological stress axes: a first sympathetic-adrenal-mark-axis (HPA-Axis)[17] - already described in 1935 by Walter Cannon – which is marked by a very direct and immediate reaction and also increases the *current* achievement ability (cf. alsoHenry & Stephens, 1977: 119). The pituitary gland – adrenal cortical – axis (HSS-Axis)[18], formulated in 1950 by Hans Selye, is seen as the second "stress axis"; its hormonal control reacts more slowly, but then sees to all the more enduring reactions (Selye, 1936, 1950 – both clearly summarized synoptically by Leonhardt & Vogt, 2006: 51). Selye's definition of the stressor, which today seems somewhat fundamentally onesided, is assumed to be so to speak omnipresent in every life situation when an endocrinological reaction can be verified; it gives a first orientation as to the degree and evaluation of the stress experience[19]: Like every requirement in life, stress can be looked at from a auantitative and a qualitative point of view.

In his study, Selye also had an eye on the chronological process which he

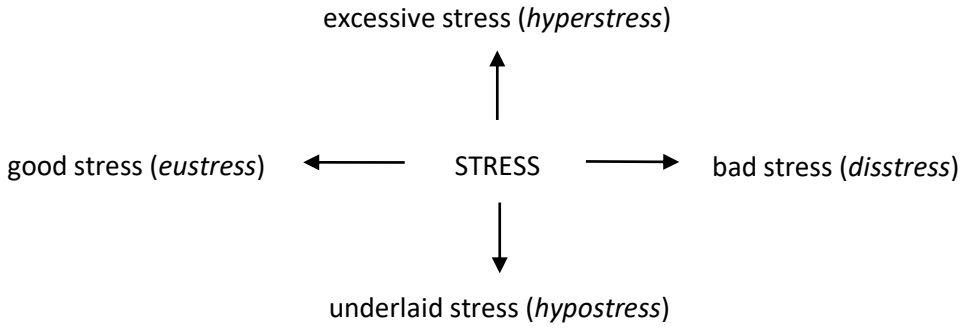


Image 2: Graphic adapted to Selye, 1968: 127

[11] E.g. high demands, time pre
ssure, unexpected interruptions and disturbances.
[12] E.g. lack of support and recognition, conflicts with managers and colleagues.
[13] E.g. noise, heat, cold, pollutants.
[14] E.g. work climate, changes in the business structure, etc.
[15] E.g. too great proximity of work units, density of procedures, individual isolation.
[16] E.g. family conflicts, fear of failure and sanctions, lack of professional experience.
[17] Hypothalamus-pituitary-adrenocortical center, or: sympathetic-adrenal-medullary system.
[18] Hypothalamus-sympathetic-suprarenal center, or: pituitary adrenal-cortical system.
[19] In this, it is interesting that Selye himself uses the concept *stress* both for the (external) stressor and for the (internal) stress reaction; graphic adapted based on Selye, 1968: 127.

took into account with the help of the General Adaption Syndrome (GAS) description. In the case of a persistent load, the model describes a process in three steps which, after an alarm phase, mobilizes the body's resistance energies (through among other things an increased emission of glucocorticoid) in a resistance phase, and after the stress experience has subsided also makes a return to the emission of the stress hormone possible. Only if the stress experience has a persistent influence does a third exhaustion phase come, with a (later complete) emission of the adaptation energy and connected with this, with chronic stress in the organism[20].

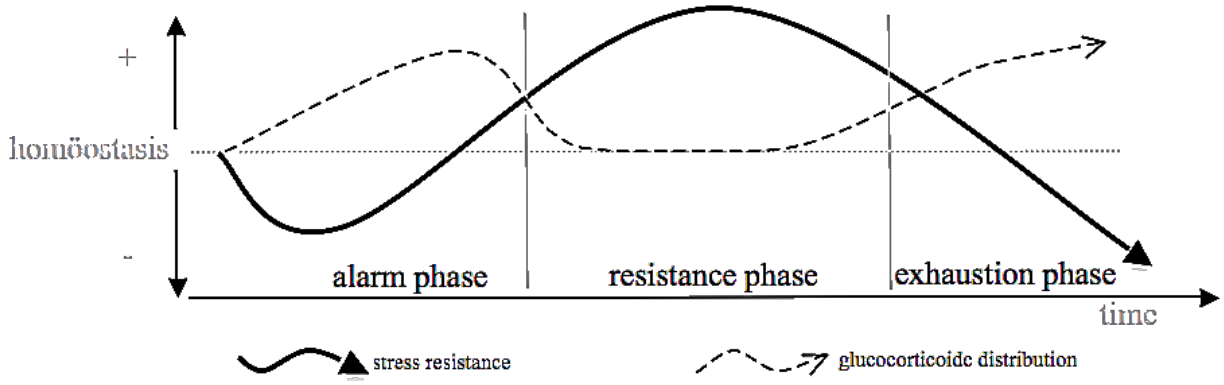


Diagram 1: General Adaption Syndrome (GAS) according to Selye, 1968

By the way: The research results developed by Selye in his approach as regards "stress as a population regulator" (cf. Darwin, 1882), and the significance of "persistent fear" among experimental rivalizing male animals are so impressive that "zoological stress research… can [certainly] be understood [as] a link between … [biology] and psychology." (von Holst, 1993: 92 ff) A detailed presentation of the hormonal regulation mechanisms, their evaluation and importance for the present study will come later in Chapter 2.3.7 in connection with the discussion on the evaluation of the salivacortisole quantity.

The consideration of psychological stressors, which is only latently present with Selye, was an early explicit part of the stress concept with Mason and marks the turn toward stress concepts that are psychologically oriented

1.1.3. Psychologically oriented Ideas of Stress

1.1.3.1. Mason: "Relevance of external Stimuli: the Stimuli-Model"

John Wayne Mason turned up during his four-year research activity so to speak as an antagonist to Hans Selye. Mason was interested in the psychological components in the stress reaction which

[20] Hellhammer & Ehlert, 2000: 193. By the way: Time line is - contrary to some later representations - introduced by Selye himself: "… during the first stage 6-48 hours after the first injury - … The second stage , beginning 48 hours after the first injury. … after a period of one to three month … [the] phase of exhaustion being regarded as the third stage of the syndrome" (Selye, 1936, July 4th: 32).

had been given too little attention (cf. Mason, 1968, 1971). He considered the focus on a physical reaction of the cortisole emission as too unspecific and thereby returned to the influence of a small number of psychological stimuli that Walter Cannon had already verified (cf.Cannon, 1929). The psychological factors which Selye had still underplayed as "*mere nervous stimuli*" (Selye, 1950: 1250) were developed in Mason's experiments at the Walter Reed Army Institute of Research both on animals and on humans. Even though Selye and Mason agreed on the goal of stress reactions, Mason's relevant criteria point in a clearly different direction: "Newness and ambiguity of a situation, a high degree of unpredictability and uncontrollability, anticipation of negative consequences and the extent of personal significance" (quoted according to Gaisbachgrabner, 2014: 17).The basis of individualistic stress dimensions laid thus was developed significantly by Richard S. Lazarus.

1.1.3.2. Lazarus: "Stress comes about by way of subjective Evaluation: the Appraisal-Model"

With Richard S. Lazarus, stress research received an unambiguous psychological emphasis. When in 1966 his book *Psychological Stress and the Coping Process* was published, it brought about a deep change in *psychological* stress research (Lazarus, 1966). Lazarus himself sees stress above all as a consequence of cognitive evaluation which functions as as a "mediator between critical requirements and individual processing endeavors" (Schwarzer, Schütz, & Ziegelmann, 2006: 674). Depending on the assessment, especially in the categories of challenge, threat and harm/damage, an intra-subjective and a transactional process of evaluation takes place. "When an individual estimates a situation to be both significant and hard to control [*primary appraisal*[21]] and and at the same time perceives that there are insufficient resources [*secondary appraisal*[22]], that individual is in a stress situation" (cf. Lazarus, 1999). According to Lazarus, a reappraisal takes place over and over again in stress situations, and this strengthens the individual for another similar stress situation in a way comparable to a learning process. Through

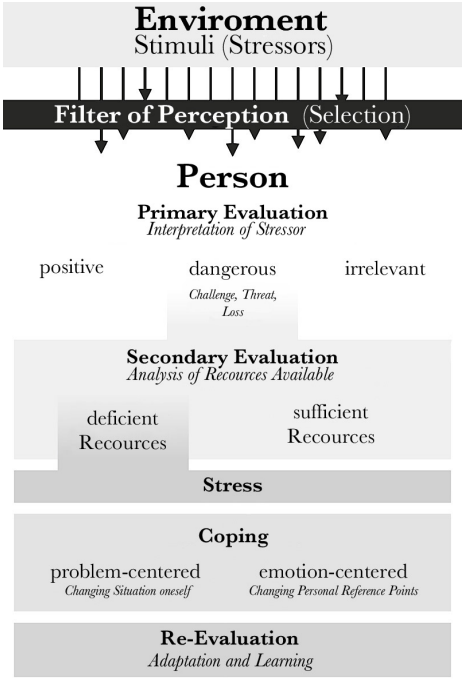


Image 3: according to Lazarus & Folkman, 1998: 31

[21] Based on environmental stimuli, a situation is evaluated as either a challenge or a threat/loss.
[22] A reference and reflection on the person's own reaction and on the environment takes place.

a problem- and emotion-orientation, Lazarus himself gives the described coping strategy complementary criteria for adaption (cf. Lazarus & Folkman, 1998).[23] The model is apostrophized in many connections as an *allostase concept*[24], which on the one hand adequately emphasizes its balanced nature, but on the other hand accepts the possibility of misunderstandings and confusion with endocrinological stress notions.

Allostase, from the Greek roots *αλλος* (= other, variable) and στάσις (=stand, stability), is usually translated literally as *to reach stability through change* (cf. von Kienle, 1981). In this way, a process is characterized by which the body in situations of requirement (*stress*) maintains a stability that also includes future loads. The word *allostase* aims at describing this condition not only in a physiological sense, but also in a psychological one. It is not for nothing that the idea of *allostase* is seen as a modern and still valid construct to describe adequately situations of load and strain conditions as well as recovery

1.1.3.3. McEwen: „Balance at various Levels: the Allostasis-Model“

Bruce S. McEwen places at the center of his interest a balance both at the levels of physiological stress hormonal regulation and at that of psychological settlement between the requirement and the person's own evaluation (cf. McEwen, 1998). His integrative thinking unites not only the already sufficiently described physiological and psychological aspects, but raises the "threat of homeostasis" itself to a definition of stress.[25] Of course McEwen also assumes that short-term stress reactions have a protective and adaptive effect, but these lead in the long term to damages: Allostatic adaption that is required over and over again leads to organic wear, which in turn is in direct correlation with the efficiency of the stress reactions and the frequency of exposition (cf. McEwen & Stellar, 1993). Since 1998, the interplay between the various levels of processing has come to be internationally known through the following presentation:

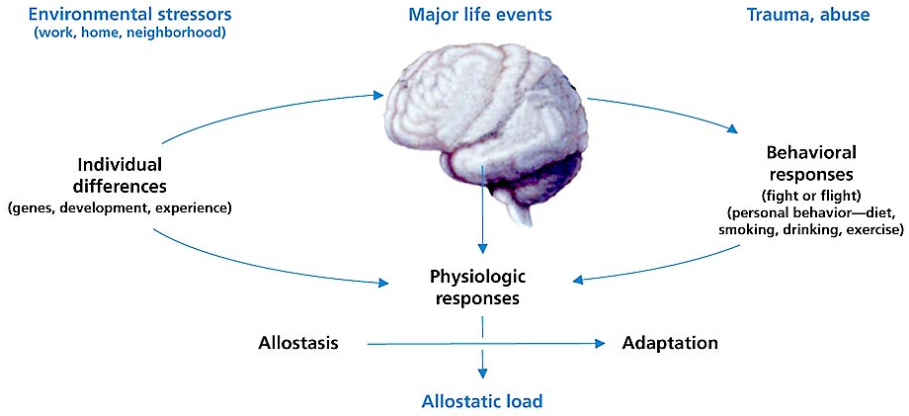


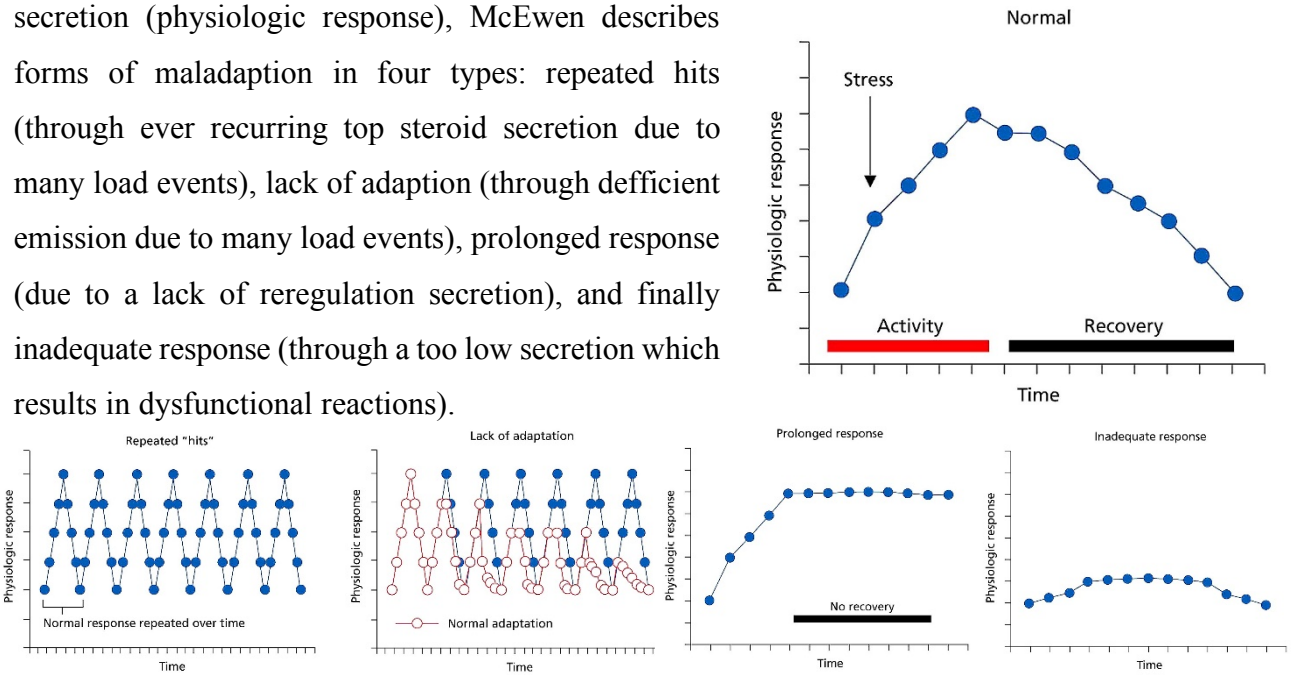
Image 4: Stress-Response-Cycle according to McEwen, 1993

[23] The research by Shelley E. Taylor serves as an example here; she could show that "it is not always beneficial to the wellbeing of patients with chronic illnesses when their health condition is estimated realistically" (cf. Taylor, 1983 Taylor, 1983). Optimism and expectations of competence (so-called positive control illusions) and significance discovery can have a positive influence on the processing of disease (Schwarzer, Schütz, & Ziegelmann, 2006: 675).

[24] Cf. Chapter 1.1.3.3. McEwen: "Balance at various Levels: the Allostase Model".

[25] Later, David Goldstein and Ian Kopin also took over this definition (Goldstein & Kopin, 2007).

From a psychological point of view, "McEwen (1998) assumes that e.g. hostility or cooperation, risk behavior or self-protection, the consuming of psychotropic substances, activity or withdrawal represent stress-associated forms of behavior. From a short-term perspective, these have a supportive effect; however in the long-term they damage and become a load" (cf. McEwen, Sterling, & Eyer, 1998). Physiologically, steroids and catecholemines as stress mediators[26] are at the center of McEwen's interest. Along with a "normal curve" of physiological stress hormonal secretion (physiologic response), McEwen describes forms of maladaption in four types: repeated hits (through ever recurring top steroid secretion due to many load events), lack of adaption (through defficient emission due to many load events), prolonged response (due to a lack of reregulation secretion), and finally inadequate response (through a too low secretion which results in dysfunctional reactions).



Diagrams 2 - 6: Stress-Response according to McEwen, 1993

It will hardly be surprising that after an emphasis on *allostasis* came a movement in the history of research that turned to further-leading levels of thinking on balance. Thus Hobfoll developed an idea that focuses in particular on resources.

1.1.3.4. Hobfoll: "Maintaining Ressources: the COR-Model"

Steven E. Hobfoll speaks of human activity above all in connection with social surroundings: Since human beings not only protect their own integrity but also that of the community, they act in such a way that not only individual resources and individual resource management are an issue, but also reflection on shared resources (cf. Hobfoll, 1998). Along with the most varied intra-individual aspects in Hobfoll's *Conservation of Resources: COR* model, the stress-affected individual's interaction comes to the fore. According to the model, this can call upon a highly

[26] "Mediator characteristics refer to the kind of psychological or somatic processes that are 'turned on' between the stimulus condition and the reaction (Erdmann & Janke, 2008: 25).

differentiated resource management, which is why in the COR model, the *conservation* of resouces goes before the new acquisition of resources (cf. Hobfoll, 2001, Hobfoll & Freddy, 1993). Resources as such are defined as a kind of reserve which people "possess", which gives them security, and which they consequently constantly seek (cf. Starke, 2000). Thus the concept of resource has a broad significance, as the following description shows (cf. Hobfoll & Buchwald, 2004):

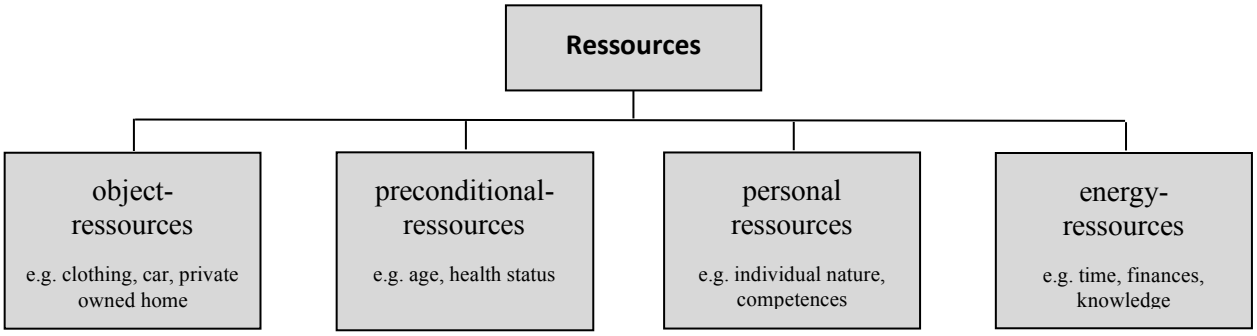


Image 5: Ressources to stress according to Hobfoll, 1998

In other words: The loss of resources often includes negative emotions on the part of individuals (Hobfoll & Freddy, 1993: *ibid.*). This approach, which seems more trivial, gains dynamic through the additional assumption that the disposal of resources is subject to individual evaluation. Thus Hobfoll not only integrates a social component in his idea of stress, but combines this with the criterion of internal evaluation already described. In an image of multi-axional coping, three axes of cooperative resource management are thus described: the active-passive axis (with an individual focus), the prosocial-antisocial axis (with an interactional focus), as well as the direct-indirect aspect (with a strategic focus).

Iwanowa's resource-requirement-stressor model directly follows this basis.

1.1.3.5. Iwanowa: "Ressourcen-Requirement-Stress: the RAS-Model"

(German: *Ressourcen-Anforderungs-Stressoren*-Modell: *RAS-Model*)

Anna Iwanowa's Resources-Requirement-Stress Model (*RAS Model*) attempts a renewed balance between the various stress components (Iwanowa, 2004)[27] taking into account all the stress dimensions developed in the meantime. Already the graphic illustration shows this clearly (*ibid.*: 145) by presenting the three

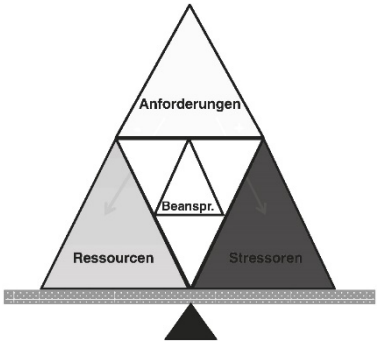


Image 6: „Stress-Balance" according to Iwanowa, 2004

[27] All the following quotations are from Iwanowa, 2004.

dimensions *demands*[28]*, stressors*[29]*,* and *resources*[30] at the tip of the scales. In her thinking, variability, holism, feedback, quality, as well as cooperation and communication requirements are counted. The content with which stressors are filled are insecurity, responsibility, cognitive strain, time pressure and organizational difficulties, whereas resources consist in degrees of freedom regarding chronology and content, supply of information on work and organization, development options, and possibilities of participation as regards cognitive and social competence in the group and the organization. Thus the RAS model does not add any new module to the stress concept, but attempts to give integration and appropriate weight to the adequate description of the phenomenon *stress*.

1.1.4. Standardisation in DIN EN ISO- and ÖNORM EN ISO 10075

Rohmert's definition (Rohmert & Rutenfranz, 1975: 56), which calls *loads* "objective realities and factors that affect the human person from the outside", and *strains,* "their effects in and on the human person", is given a standardized form by fixating it as DIN EN ISO 10075[31] and ÖNORM EN ISO 10075-1:2000[32].

Once again, a psychological *strain* is defined as the "chronologically direct and not long-term effect of the psychological load on the individual depending on his or her respective persistent and momentary preconditions, including the processing strategies" (Joiko, Schmauder, & Wolff, Juli 2010: 8f.). Thus psychological *load* is presented as the total of all detectable influences that come toward the human person from the outside and have a psychological effect on him or her (cf. *ibid.*: 9). Surprisingly, in the understanding of the editing "*Ergonomics Standards Committee* ISO TC 159 [German: "Normenausschuss Ergonomie ISO TC 159"], work as such is already presented as a psychological load, the consequences[33] of which can have various forms in the multiple complexity of individual disposition and systematic resources.

[28] "... objektive requirements for action, the processing of which is indispensable for the successful and effective carrying out of the work"; ibid.: 146.
[29] "... objective requirements for action, the processing of which leads for the majority of people to negative effects in their experience and behavior", ibid.: 18.
[30] "… potential possibilities for action that are objectively extant and really exist (degrees of freedom, options), that are available for use and mobilization in the work, the actual use of which is however not required and can be freely chosen"; ibid.: 145
[31] Cf. „Ergonomic principles with regard to mental workload" [german "Ergonomische Grundlagen bezüglich psychischer Arbeitsbelastung", quoted via www.BAuA.de in November 14, 2016.
[32] Cf. ibid.
[33] As shown in detail in Chapter 1.1.1.