Small or big rescue actions, complicated ones or those quite “simple” - tend to leave traces in the psyche of their participants, always and without any exceptions. The victim, the rescuer, his commander, the decision-maker, and even incidental witnesses - all of those people, whether they want to or not, become emotionally engaged in this type of incidents, although they play different roles, this type of engagement has a completely different dimension to each of them. After all, each dramatic sudden incident leads to defined tension. Those incidents take place not only in a physical dimension of each man, but also on the mental level, and to put it more widely in a social dimension as well, as we are dealing here with groups of people. It is also quite obvious that each person experiences this compulsory participation in a real drama in an absolutely individual way. At the same time, because of the fact that during rescue actions we are faced with groups of people, to be observed are emotional group reactions, which are different for various groups. Those reactions are not only due to the role that is fulfilled in a given incident by a certain group - such as rescuers, the endangered part of local society, experts - but also due to the acquired experience, common history, and cultural premises. The latter may also exert significant direct influence on the course of a rescue action. For example in Holland, in the case of a threat to life a rescuer has priority before the rescued. Such an attitude resulted from experience of Dutch firemen; during one of the actions of fire extinguishing eight firemen lost their lives when rescuing people from a house on fire, which in the end collapsed and buried all underneath. Such an example shows that the past influences the present, both in the scope of undertaken actions, and in the scope of the emotional state. Hence when we speak of psychology of rescue actions we should not restrict ourselves only to the incident itself, but the problem should be instead studied within the whole time: before, during and after the event. To allow a clearer emphasis of certain problems let us focus on major incidents - those that may be ascribed to disasters. A disaster is irreversibly connected with a tragedy. It falls deeply into social memory. Frequently it changes irrevocably the way of living of individual people and who local population. Nonetheless, as time passes emotions connected with the disaster decrease. And even though that for various individual people the passage of time may not be of such profound importance, in the case of local population indifference grows to possible future incidents of this sort. Thus we are faced with a situation in which greatly faded emotions connected with “past” history coexist with the hope that the same thing would not take place in future. In the article this period of time is defined as a period “after-before” the disaster and is related to the period of drama and the period of discomfort.

When speaking about psychology of rescue actions there should be no restrictions to the incident only but the problem should be studied within the whole time, i.e. before, during and after the event. Disaster is irreversibly connected with a tragedy that falls deeply into social memory. Frequently it changes irrevocably the way of living of individual people and whole local population. Nonetheless, as time passes emotions connected with the disaster decrease. And even though that for various individual people the passage of time may not be of such profound importance, in the case of local population indifference grows to possible future incidents of this sort. Hence we are faced with a situation in which greatly faded emotions connected with “past” history coexist with the hope that the same thing would not take place in future. Let us define this period of time as a period “after-before” the disaster. It is worthwhile to analyse in what way is a threat of possible drama perceived within that range. How is it perceived by its later participants?

Perceiving

As we have already mentioned, the more time has passed since the disaster, the smaller its influence on the emotional state of its participants. Roman Ingarden wrote that a human being “... manages to realise – thanks to his victories, and even through his defeats – the values of Good and Beauty,(Ingarden R. 1998).”, but also strives at prosperity, and focuses his attention on the creative work of self-realisation. All that may constitute an obstacle to the achievement of those goals constitutes in “normal life” only a secondary background. A background that is obscure, distant and unreal. As a rule in the consciousness of various people, and above all in the common awareness of local communities, matters connected with hazards are either underestimated – on the level of apathy, or else exaggerated. And despite the fact that what we have in mind here about constitutes a subjective perception of a hazard, in Sandman’s (Sandman P. 1997) opinion it belongs to reality not less than the physical existence of the hazard itself. This matter is of particular importance and constitutes a key to comprehending
differences concerning perceiving of hazards on the one hand by experts (this group shall include in this case also rescue services), and on the other hand – by the local community.

When analysing hazards, experts tend to apply as a rule engineering evaluation methods (in this case precise calculations are impossible) of the possibility that an unfavourable incident might occur and for the determination of its consequences. In the experts’ opinion this constitutes the only objective evaluation of the existing situation, devoid of “emotion”, and consequently a real one (with accuracy equal to precision of calculation method). As a rule they are convinced that social feelings are not essential, as they are subjective, frequently based on legends, unclear remembrances, and hysterical evaluations. But above all experts presume that such evaluation lack premises based on “honest” engineering knowledge.

The phenomenon of occurrence of such profound differences in perceiving hazard between experts and local society is not rare and bears the name of “expert arrogance” (Wynne B. 1992). This conflict is not insignificant at all. After all, refusal of opinions expressed by local community in matters that concern them to such an extent (in such a vital way) may lead to several dangerous conflicts (Healy S. 2001). The most dangerous of them include, among others, the possibility of setting up a law that would impose against the will of the community solutions that conform to the engineering expert ideology, which as a rule permit numerous means of duress (e.g. compulsory evacuation). Other dangers connected with not taking into account of social opinion include also taking a decision on the constructing an industrial plant processing dangerous chemical substances in spite of social protests, but instead in conformity to calculations of experts. After all, such protests may turn into social unrest and in the case of some breakdown (which may not be ruled out even by the most accurate calculations) into behaviour inadequate during rescue actions. Sandman, whom we have already quoted, wrote in his book (Sandman P. 1997) that the correlation between an expert’s opinion and social assessment in the scope of hazards took place already on the level of 4%. To put it more simply, this means that for each hundred cases of hazard evaluation, in 96 cases they are divergent. The mathematical interpretation of the fact is that hazards evaluated by both groups constitute almost independent variables. In other words, it is indeed true that experts say one thing and the people another thing. The fact that experts accuse a simple citizen of his having insufficient knowledge is understandable from the intuitive viewpoint. But why do people have so little confidence in experts?

This is due to a lot of reasons. One of them is the frequent conviction that experts are paid by people that await in return a particular result of an expertise, like for example representatives of industry. This universal conviction that an expertise serves somebody’s particular interests did not spare also rescue services themselves. Many decision-makers for example are convinced that hazards are overestimated to allow the acquisition of additional expensive equipment. Nonetheless, to a large extent the essence of conflict is a lack of social agreement – contrary to the opinion of experts – for the establishment of new risk sources (e.g. construction of chemical facilities, transit road for transport of dangerous materials, or perhaps – as it happened in Poland – the construction of a nuclear power plant in Żarnowiec). At this point one should keep in mind that during such conflicts it is experts who lose as a rule. This was exactly the main reason why Sandman – who as he admitted was dealing with risk communication – was forced to redefine the concept of risk. This definition that is particularly worth attention is as follows:

\[ \text{Risk} = \frac{\text{assessed hazard}}{\text{outrage}} \]

In conformity to the above definition risk comprises two basic elements. The first one is the assessed hazard, which is nothing but risk defined in a classical way. This concept includes the ratio of probability that the unfavourable incident occurs, as well as its consequences. Hence the assessed hazard is comprehended by the experts as risk.

\[ \text{Risk} = \frac{\text{probability of occurrence of an incident}}{\text{consequences of the occurring event}} \]

As it may be seen the language of risk (in the understanding of experts) is the language that determines possibilities of occurrence of incidents multiplied by their “magnitude”. This is not the language connected with conviction. In social perceiving the language of suppositions does not express clear opinions. It leaves a large field for guesses. This is due to the fact that from the point of view of a modified definition of risk, experts attach excessive attention to the first part of the risk, as a rule ignoring the second one. On the other hand, in the social opinion the first part does not have such importance as the second one does. Consequently it is necessary to solve the question which of the elements is more connected with risk? Is the value of risk predetermined by assessment of probability of occurrence of a disaster and its consequences? Or is the risk value determined by social reception? In other words, which of the mentioned factors has a real influence on risk? When seeking an answer to this question, one should fully agree with Sandman that both factors exert a real influence on risk and both are equally significant. He stated as follows:

“...Societies frequently perceive hazards in an incorrect way. Experts frequently perceive social unrest in an incorrect way. Yet the essence of the issue is the fact that communities pay too little attention to hazards, while experts pay insufficient attention to social unrest ...”

In such a way both parties speak only of risk components, and not of risk as a whole. In order to allow full explanation of the discussed problems, let us make use of an example quoted by Sandman himself. A skier who likes to ski on steep mountain slopes does not consider his hobby as risky. “A classical” expert would state that a skier has a hobby of considerable risk. Nonetheless, owing to their voluntary character, ski jumps do not cause any anxiety. One of the risk components consequently becomes insignificant (in this case it equals zero), hence the risk is small, although a very serious hazard does exist.

*The bigger the voluntary character of “giving in” to hazard, the smaller the risk.*
This is one of the most fundamental conclusions from our deliberations. Preparations for further rescue actions may not disregard this fact. If in our understanding the acceptance of risk is an agreement - to a bigger or smaller extent a voluntary one - to risk exposure, then it may be ascertained that such a subjective element as risk acceptance lowers the value of that risk. On the other hand, can we take a decision of going to a dentist about whom we know that his HIV test is positive. Going to any dentist like that means this type of hazard. A dentist aware of his having a positive HIV test result shall apply additional safety measures. Hence the hazard of infection is even smaller than if when a dentist - and particularly we - are not aware of the test results. In such a case no such additional safety measures are applied. Anyway, shall we go to a dentist whose HIV test result is positive? In such a case the dominating factor is anxiety. Consequently the risk is so high that going to "our" dentist becomes problematical. May in connection with that the anxiety factor be further considered to be illusory? Do both factors have the same influence on the risk value? The voluntary character is not the only element that influences perceiving of risk. The below table illustrates also other elements which have an influence on risk perceiving, and hence its value (Klein R. A. 1997).

Selected elements that have an impact on risk perceiving (Klein R. A. 1997)

| Criteria                                 | Perceiving of risk       |
|-----------------------------------------|--------------------------|
|                                        | Perceived as lower       | Perceived as higher |
| Source                                  | Natural                  | Civilizational      |
| Voluntary character                     | Voluntary                | Involuntary         |
| Disclosing                              | Immediate                | Delayed or unnoticed|
| Severance (number of endangered people) | Common: a few endangered persons | Disastrous: a lot of endangered people |
| Limitation                              | Controllable             | Uncontrollable      |
| Profit                                  | Obvious                  | Obscure             |
| Familiarity with risk                   | Known                    | Unknown             |
| Endangerment to:                        |                          |                      |
| frequent risk                           | Frequent                 | Accidental          |
| infrequent risk                         | Infrequent               | Frequent            |
| Necessity                               | Indispensable            | Superfluous (luxury)|

Let us ponder for a moment how possible disasters are being treated by decision-makers. When we speak of decision-makers, we understand local self government authorities, as in a self-government poviat it is the district authority (the starost) who is responsible for safety of poviat inhabitants (in the town - the mayor). His role during a disaster becomes of key importance. Despite the fact that it is not he personally who is supervising the rescue action, yet frequently the effort of rescuers may got to waste without his participation. A good example may be constituted here by taking care of inhabitants who are evacuated in winter without their possessions from a house on fire. Statistic data prove that they include sick, old and handicapped people. The drama of those people is not ended when the direct hazard to their health and life has been removed. After all, that is when new kinds of dangers do appear: an intense stress that may lead to a heart attack, possibility of getting pneumonia etc. Hence it is important in what way the shadow of the future disaster is being perceived by people who according to the law are to protect us from it. Those people naturally also included in the generally obligatory rule in such cases: the more time has passed from the last disaster, the stronger the feeling of apathy. The wishful thinking, and namely "this is not going to happen here", constitutes a rule here. That is why decision-makers frequently experience an inner conflict based on the fact that services connected with rescue actions pose demands the fulfillment of which is very costly - budgets are always too low - and that frequently makes them impossible to fulfill. One should keep in mind that the appointment of self-government authorities in Poland has not much in common with their programmes concerning protection against hazards. They are as a rule connected with economic and cultural development of a region, and not fighting phenomena that may disturb that development. Stress resulting from this conflict is increased by the fact that the appointed starosts, mayors or presidents of towns are not specialists in such a complicated field - in their opinion - as hazard management. Things are not made any easier to them when specialist services assure that they should take over rescuing of people as they are able to do that much better, after all, rescuing has a slightly different meaning for either of them. Many decision-makers are tempted and actually do leave matters connected with safety up to rescue services. Unfortunately, this constitutes a manifestation of the already mentioned apathy. Safety management is not exclusively limited to the ability of reacting. It has a much wider dimension, and frequently encroaches the field of politics, and consequently it is much closer to authority, and not to specialist services. This is all the more correct as protection of local society includes not only the classical understanding of life, health, possessions, environment, but also everything which in the scale of a poviat (gmina, township or town) constitutes the essence of local community and hence of all social, cultural, business, and even neighbourhood ties. Such a widely understood thinking about protection of local society is surely closer to a politician than to a specialised service. The activity of a politician in this scope is a question of overcoming his own feeling of apathy. The floods that have occurred in Poland in 1997 proved that many local politicians were surprisingly efficient in management during the crisis itself. It should be emphasised that nobody had prepared them for this role. Before the flood, as usually in the time period "after-before" the catastrophe, they were rather characterised by an apathy in the issue of floods. Nonetheless, there is another side to the same coin. The government decision-maker, knowing that he is responsible for safety of people, thanks to his authority can order the implementation of appropriate plans in case of a disaster. Apart from the fact that this is only an element of the whole task, one should keep in mind that plans on paper constitute another manifestation of apathy, known in this case as the "paper syndrome". The awareness that plans are available is reassuring. It causes a situation in which we tend to justify not taking up of several undertakings connected with the process of safety management, including undertakings...
indispensable for possible rescue action. This type of stifling the voice of one’s conscience turns back against a person very quickly. Inadequate plans are much more dangerous than none. The lack of plans makes one wonder over the way of acting in case of a possible disaster. One asks oneself what one would do if the given incident were to happen. On the other hand, if plans are available, I have nothing to worry about, because they have all the necessary information. Unfortunately the paper syndrome is a frequent illness and no country is free of it. The only question that remains is in what way the same protection system obligatory in a given country is able to defend itself against the consequences of that illness.

Drama

The phase “after-before” the disaster is characterised by a static progress. It may seem to all interested persons that they have a lot of time in their hands. In practice the pressure of time, which is one of the most significant stress inducers, is – if one may say so – neglectedly low until the moment when the disaster occurs. Of course the situation changes from the moment on when the disaster starts its destroying work. Let us focus on the disaster, which occurred all of a sudden, on a vast area or, which is equivalent from the point of view of our deliberations, with a high number of victims, but on a small area. A characteristic trait of the initial phase of such a disaster is either a lack of information or the inflow of a large quantity of information, about which one may only say that they are contradictory. This problem concerns all participants of such an incident. It is worthwhile to mention them here. They include victims, rescuers, and local decision-makers, higher ranking decision-makers, relatives and friends of the victims. The latter group of disaster participants frequently - but not always – is outside the range of interest of those who bring help to the victims. And after all also those people belong to the group of victims. Often one may see on the television screen the despair or hysteria of people waiting at the airport after an airplane disaster. Unfortunately in the majority of this type of disasters those are the only victims in need of help. And although this disaster was hundreds of kilometres away from the airport, its shadow knows no space boundaries. It spreads as quickly as information. We can see it in the despair of people. When preparing rescue plans, or in the process of civil planning, do we take into consideration this group of people gathered on a small space and hit by the tragic news? Is their condition within the category of psychology of rescue undertakings? The answer is clear. This group is composed of victims. Victims need help. The fact that this type of help is taking place in a different way than that understood in the classical sense, that it requires different methods and tools is of no importance here. Those are victims in need of help.

The sudden character of the incident, in connection with the lack of information or the inflow of contradicting information, are of course stresses generating factors. Acting under pressure of time causes that even a well-trained rescuer focused on manual actions is liable to make mistakes connected with the assessment of real condition of the victim. A typical example here may be constituted by the rescuer not recognising the shock in which the victim is. Consequently, in case when there are no external injuries, the victim is left on his own. Of course, after he had been taken away from the place of direct danger. That is why a few years ago we could see in the news an interview with a victim of an airplane crash. The interview was taking place on the Warsaw Okęcie Airport, directly after the victim was taken out of the airplane, and was on his way home, unstoppable by anybody, except the journalist. Rescue procedures do not include those victims who had suffered “nothing” apart from being in shock. As a rule the action of the rescuers end once the victims are taken to a safe place. But what does a safe place mean? After all, if a shocked victim is in a place he is not familiar with it may only make his condition more serious. Even if he is taken to a hospital, and maybe because of the fact of being there (NIMH 1990)? Rescue actions must be subordinated to the needs of victims in every possible way (Palmer M. 2001). Each action requires an individual approach, a different strategy. A child lost in a wood at dusk may be seriously frightened and may experience shock when the rescuer appears, in full uniform and with his face covered by a mask, looking more like an alien. Similar shock was experienced by a woman imprisoned in a cell after the earthquake in Armenia, where she was found by a French rescuer. He was dressed in his wonderful shining helmet, completely unknown for the victim. The shock was made even more profound by the fact that the victim was not aware of the earthquake itself, and was convinced that her town had been bombarded by the Germans (shadow of the preceding disaster from the period “after-before”), and now one of the invaders was coming to get her (VII International Conference of Principals of Civil Protection Schools Paris 1997). Such a shock could have been experienced by a girl, imprisoned inside a car and unable to observe her surroundings, if her request – spoken to the psychologist holding her hand – for the rescuers to act more quietly was not obeyed. The rescuers gave up the application of hydraulic tools to cut the chassis and used manual equipment. The action took an hour longer (Programme “911” BBC Prime). Unfortunately at the moment no scenarios of the course of events during a disaster can take into account the behaviour of victims. The only exception may be constituted by panic, which – as is shown by statistics – is not a frequent phenomenon.

It is worthwhile to have a closer look at another group of people, who are not rescuers and yet who actively participate in the rescue actions: dispatchers. Those are people who handle information. They participated in the incidents listening to what was happening. Although their knowledge is only limited to what they hear, it might prove to be absolutely sufficient to cause shock, trauma or behaviour connected with deep emotions. Those deliberations are not purely academic. On the Baltic Sea a rescue training was planned at night time. All the teams participating in the exercises were informed about them, including the Alarm Centre in Turku, Finland. Several hours before the exercises one of the biggest tragedies of the last years took place. The Estonia ferry started to sink. The closest Alarm Centre was the one in Turku. It was there that the first information was received. The dispatchers with absolute calm fulfilled their duties in a routine way, fully convinced that it was only the planned exercises that had been com-
The drama of decision-makers, and particularly of the local ones, is not only based on the fact that they must handle something they have not been faced with before. They come into contact with matters they are completely not familiar with. They must work in the surroundings of people who are frequently upset, acting under pressure of time, not having full information at their disposal. Those conditions are naturally highly stress-generating, but – as was already mentioned – that is not the most difficult aspect of it. The biggest fear of a politician is a political death if things go wrong. The loss of social respect, the loss of authority among people for whom he is fulfilling his political mission cause the strongest emotions. If the disaster appears suddenly, without warning, decision-makers are faced with its consequences before they are able to do anything. The mass media turn up. During one of flash floods on the south of France, after an extremely difficult 24-hours spent in the centre of rescue co-ordination, the mayor of one of the townships in which the flood had occurred read in the presence of his wife and his children a headline in the local press: “... bloody hands of the mayor ...” (VII International Conference of Principals of Civil Protection Schools Paris 1997). It may be said that for this respected local politician his hitherto world has been completely ruined. It has no sense to ask whether opinions of the journalist were justified. It is not possible to explain to everybody how things really were. This is the highest price that a politician may pay. One ought to add that the share of local governments in rescue actions is of key importance. In the case of rescue actions on the area of a powiat it will be the starost who will be taking numerous decisions of a political character connected with the rescue action. An example of such an action may be the decision of blowing out the dam which would cause flooding of the village but saving a bigger district or a town. Such a situation took place during the floods in Poland in 1997. This type of decisions is always unpopular and always must be taken during fighting consequences of a disaster.

At the end of this part of the deliberations it would be worthwhile to quote results of tests conducted by Grissen from the University in Frankfurt/Main, and published in the October edition of Fire International (Grissen B. 2000), in the article entitled “Alarm Calls – Watching closely stress in the watch-tower”. In her publication the author compared the influence of some stress factors on firemen during rescue actions and the same stressors during the period of readiness. Eight stress generating areas were determined: environmental (the closest surroundings of the fireman), risk of accident, co-operation, pressure of time, concentration, uncertainty, complexity, freedom of taking decisions. As could have been expected it was ascertained that generally challenge in rescue actions are bigger than in the time of readiness. Yet making conclusions on this basis that stress resulting from rescue actions is the main reason for problems facing rescuers is not absolutely true. Studies have shown that tasks connected with bigger challenge do not cause an increase in negative influence provided management is well organised. Otherwise appears stress leading to illness symptoms. During rescue actions accepted are certain handicaps connected with management, as everybody is well aware of the time pressure. The very same handicaps in the time of readiness – the time “after-before” the disaster – are already not acceptable, as they fail to fulfill expectations of various persons. It ought to be emphasised that if we had used Sandman’s language we would find out that in the second case the factor of unrest increases. Another interesting result of the studies is the statement that a determining factor connected with psychosomatic problems is not age of the rescuer, but the time of his overall service. Differences in expectations connected with service during implementation of tasks during the readiness phase in the barracks lead to considerable stress (I am not a fireman so I don’t have to do the cleaning), which could not have happened during rescue actions. This very generalised summary of some results of the author’s studies also indicates other stress generating factors that influence the rescuers, apart from those generally known and studied.

Discomfort

The disaster lasts so long until the victims have achieved the condition of health and emotional state closest to the one before the disaster. The shadow of the experienced disaster is impossible to be removed. What may first of all be observed after the disaster is the rapidly vanishing interest in matters connected with it. Very quickly the phase “after” the disaster passes into the “after-before” disaster with the apathy that is characteristic for it. And one must not forget that consequences of a disaster might appear immediately after the disaster or long afterwards. In the below table NIMH 1990 presented were some relation of victims set up in age categories.

The shadow of a disaster is particularly intense in the phase after the disaster. And despite the fact that no direct life endangerment occurs all the people involved suffer. Studies (Cohen R., Ahearn F. 1980) indicate that the phase “after” comprises a series of stages. The first one concerns the time at the moment when the disaster occurs and immediately after its occurrence. At that time emotions are very strong and include: fear, torpor, shock, loss. People become aware of the challenge they face and start to heroically react to it to rescue one’s own life and that of others, as well as property. Dominating are altruistic attitudes, and people cooperate well one with another in the rescuing of others. The biggest help on this stage is obtained by the victims from their families, their neighbours and rescue services. The second stage lasts generally speaking from one week to a few months after the disaster. The symptoms are as follows: change in appetite, problems with digestion, trouble with sleeping and headaches. Moreover, such states as anger, distrust and irritation may appear. The victim may become depressed, indifferent and passive towards the family and friends, as well manifest increased anxiety about the future. On the other hand, victims and those who have lost their closest relatives (as we have already mentioned, the latter group are also victims) feel eager to share one’s experience with others. The third
Some relation of victims in age categories (NIMH 1990)  
Table 2

| Reactions in pre-school age | Reactions in the age group up to 10 years | Reactions of teenagers | Reactions of adults | Reactions of older people |
|----------------------------|-----------------------------------------|-----------------------|--------------------|--------------------------|
| *Crying | *Headaches, other ailments | *Psychosomatic problems, such as ulcers and problems with the heart | *Depression, passive behaviour |
| *Sucking the thumb | *Depression | *Depression | *Apathy |
| *Diarrhoea, wetting | *Discomfort connected with the weather, with safety | *Embarrassment | *Disquiet, anger |
| *Fear of remaining alone | *Embarrassment | *Unhappy appearance | *Irritation |
| *Irritation | *Unhappy appearance | *Aggressive behaviour | Passive behaviour, distrust, irritation |
| *Embarrassment | *Inability to concentrate | *Unhappy appearance | *Anger |
| *Immobility | *Hiding behind the backs of others | *Aggressive behaviour | *Lack of appetite |
| *Fighting | *Fighting | *Unhappy appearance | Problems with sleeping |

The whole conflict is that expectations of the rescuer after a difficult rescue action differ basically from the reaction of his family. Naturally the problem discussed here constitutes only a tiny section of problems connected with emotions of rescuers. The problem is
that their superiors are to a large extent unaware. It may not be excluded from the problems connected with psychology of rescue actions.

Different emotions are evoked when the rescuer is in watch-tower and waits for an alarm. The essence of the rescuer’s job is acting, and not waiting. If there is not a sufficient number of actions, the feeling of discomfort appears.

The series of problems discussed in this paper is connected with the phenomenon of the disaster. It constitutes for them the common denominator. Hence they are within the scope which might be called the psychology of disasters.

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